BUREAU OF LAND MANAGEMENT
GREATER MOOSES TOOTH 2 (GMT2)

NEAR FIELD AIR QUALITY IMPACTS ANALYSIS
GREATER MOOSES TOOTH 2
NATIONAL PETROLEUM RESERVE, ALASKA
20172405.001A

September 22, 2017

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ACRONYM LIST

AAAQS	Alaska Ambient Air Quality Standards
ADEC	Alaska Department of Environmental Conservation
ADR	Annual Data Report
AQ	Air Quality
AQIA	Air Quality Impact Analysis
ARM2	Ambient Ratio Method 2
ASDP	Alpine Satellite Development Project
ASRC	Arctic Slope Regional Corporation
BLM	Bureau of Land Management
CH_4	Methane
CO	Carbon monoxide
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalents
CPAI	ConocoPhillips Alaska, Inc.
deg K	degrees Kelvin
EIS	Environmental Impact Statement
g/s	grams per second
$g/s/m^2$	grams per second per meter squared
GHG	Greenhouse Gas
GMT1	Greater Mooses Tooth 1
GMT2	Greater Mooses Tooth 2
GWP	global warming potential
H_2SO_4	Sulfuric Acid
HAPs	Hazardous Air Pollutants
hrs	hours
IDLH	Immediately Dangerous to Life or Health
kg/ha-year	kilograms per hectare per year
km	kilometer
m	meter
m/s	meters per second
m^2	meters squared
mg/m^3	milligrams per meters cubed
MEI	Maximum Exposed Individual
MLE	Most Likely Exposure

MOU	Memorandum of Understanding
NAAQS	National Ambient Air Quality Standards
NAD83	North American Datum of 1983
NEPA	National Environmental Policy Act
NO	Nitric oxide
NOx	Nitrogen oxides
NO_2	Nitrogen dioxide
N_2O	Nitrous oxide
NOAA	National Oceanic and Atmospheric Administration
NPR-A	National Petroleum Reserve in Alaska
NWS	National Weather Service
OLM	Ozone Limiting Method
$PM_{2.5}$	Particulate matter less than 2.5 μm in diameter
PM_{10}	Particulate matter less than 10 μm in diameter
ppb	parts per billion
ppm	parts per million
PSD	Prevention of Significant Deterioration
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
QC	Quality Control
REL	Reference Exposure Limit
RfC	Reference Concentrations for Chronic Inhalation
RFD	Reasonable Foreseeable Development
SEIS	Supplemental Environmental Impact Statement
SO_2	Sulfur dioxide
tpy	tons per year
$\mu g/m^3$	micrograms per meters cubed
USDA	United States Department of Agriculture
USDOI	United States Department of the Interior
USEPA	United States Environmental Protection Agency
UTM	Universal Transverse Mercator
VOC	Volatile organic compounds

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1 INTRODUCTION

In August 2015, ConocoPhillips Alaska, Inc. (CPAI) submitted an application for permit to drill to the Bureau of Land Management (BLM) to develop and operate the Greater Mooses Tooth 2 (GMT2) drill site (BLM, 2016a). The GMT2 project proposed drill site will be on land managed by the BLM within the National Petroleum Reserve in Alaska (NPR-A), thus requiring the need for the proposed project to comply with the National Environmental Policy Act (NEPA). The BLM Arctic Field Office in Fairbanks, Alaska published the Notice of Intent to prepare a Supplemental Environmental Impact Statement (SEIS) in July 2016 (BLM, 2016a); this publication initiated the public comment period and scoping. As air quality was one of the key areas identified by the BLM that will require analysis in the SEIS, BLM requested assistance with the air quality analysis.

The GMT2 project is a modification to the project previously called CD7 that was approved during the 2004 Alpine Satellite Development Project (ASDP) Environmental Impact Statement (EIS) (BLM, 2016a). There are several changes from the proposed 2004 project including relocation of the well pad and change in access road, pipeline length, net fill, gravel source, and power cable design. The GMT2 Draft SEIS will update the information analyzed in the 2004 ASDP EIS. The purpose of the GMT2 project is to construct and operate a drill site, ancillary facilities, and pipelines to transport petroleum reserves while protecting resources (BLM, 2016a and BLM, 2016b).

As part of the NEPA analysis, the air quality analysis contained in the SEIS includes near field modeling, which analyzes the impacts within a 50 kilometer (km) radius of the proposed GMT2 Drill Pad. The air quality analysis in the SEIS is responsive to the June 23, 2011 Memorandum of Understanding (MOU) between the United States Department of Agriculture (USDA), United States Department of the Interior (USDOI), and United States Environmental Protection Agency (USEPA) on procedures for assessing air quality impacts due to on-land oil and gas development activities on Federal lands under NEPA (USDA, 2011). Potential far field (greater than 50 km) air quality impacts of the proposed GMT2 Alternatives will be evaluated through a separate modeling report and included in the full SEIS.

The proposed GMT2 project will include the construction of a 14 acre drill pad on which up to 48 wells could be drilled and subsequently operated. Produced oil, water, and gas from the GMT2 project would be transported by above ground pipeline to the Alpine Central Processing Facility and well pad, also known as the CD1 Facility. New above ground pipeline infrastructure would also be constructed for the proposed GMT2 project. Gravel for the GMT2 project will be mined at the existing Arctic Slope Regional Corporation (ASRC) mine site and transported to the GMT2 project area by haul truck. Lastly, depending on the Alternative, a gravel access road and/or an airstrip will be constructed for access to the proposed GMT2 Drill Pad.

The proposed GMT2 project would be located in an area with other existing oil and gas facilities, some operated by CPAI and some by operators other than CPAI. The closest facility to the proposed GMT2 project would be the recently approved Greater Mooses Tooth 1 (GMT1) project. Also in the general GMT2 project area are the ASRC mine site and the Nuiqsut Power Plant.

This report outlines the near field modeling results of the air quality impact analysis (AQIA) for each GMT2 Alternative either quantitatively or qualitatively. The GMT2 Alternatives are as follows:

- Alternative A – Proposed Action
- Alternative B – Different Gravel Access Road Alignment
- Alternative C – Limited Access, Year Round Drilling
- Alternative D – No Action Alternative

Each GMT2 Alternative, except for the No Action Alternative (which has no direct project impacts) have two proposed construction schedules. These schedules are discussed in Section 2. Emissions and methodologies for each Alternative, except for the No Action Alternative, have been calculated and documented through reports and letters referenced through this document (Kleinfelder and Ramboll Environ, 2017a; 2017b; 2017c). The final emission inventories for Alternatives A and C were utilized for the AQIA in the near field modeling analysis. The Alternative B emission inventory is not included as it was not modeled because it was determined that enough similarities existed between Alternative A and B that impacts would also be similar. These inventories are included in Appendix B of this document. Further details on how each Alternative were analyzed are presented in Section 3 and Section 4.

Section 2 of this report presents an overview of the GMT2 project, Section 3 outlines GMT2 Project emissions for Alternative A and Alternative C and cumulative source emissions, Section 4 discusses the methodology for near field modeling used for both Alternatives, and Section 5 discusses the results from the near field modeling for Alternatives A and C.

2 BACKGROUND

2.1 PURPOSE OF REPORT

This report outlines the information and methodologies that will be presented in the AQIA for each GMT2 Alternative and how the AQIA will be conducted for each GMT2 Alternative. The AQIA will not address the No Action Alternative as there are no emissions expected and therefore no direct project air quality impacts. Alternative A will be discussed in detail in the AQIA as it was determined that near field modeling was necessary since it is CPAI's proposed project. Alternative B was not modeled as it was determined that enough similarities existed between Alternative A and B that impacts would also be similar. Alternative B will be the same in emissions and operations as Alternative A for routine operation and drilling except for a slight increase in on-road vehicle traffic as discussed further in Section 2.2.2. As such, Alternative B impacts from drilling and routine operations can be based on Alternative A impacts. Although Alternative B has a longer GMT2 to GMT1 gravel access road, the construction surrounding the proposed GMT2 Drill Pad and access road section will be the same for Alternative B as Alternative A. Thus, maximum impacts from construction in Alternative B are the same as Alternative A.

Alternative C was explicitly modeled as operations and construction differ from Alternative A due to the extra support pad and airstrip discussed further in Section 2.2.2. All of the same methodologies discussed in Section 4 were applied similarly to Alternative A and Alternative C near field modeling. Additionally, because Alternative C is the only Alternative with an onsite airstrip, onsite aircraft emissions were modeled for this Alternative only.

As stated previously, two construction schedules were proposed by CPAI for the GMT2 Project. A timeline of each construction schedule is shown in Table 2-1. Demonstrated by Table 2-1, Construction Schedule 2, has activities spread out across 3 years instead of 2 years like in Construction Schedule 1. Therefore, it was assumed that Construction Schedule 1 is the more conservative modeling schedule for construction activities, as processes and emissions are packed into a shorter time, and was used for the Construction Modeling Scenario discussed in Section 4 for both Alternatives A and C.

This GMT2 AQIA discusses the near field impacts due to onsite project emissions, offsite project emissions, and cumulative emissions. Near field impacts were analyzed through the use of AERMOD and compared to applicable state and federal standards as discussed further in Section 4.

2.2 PROJECT INFORMATION

The proposed GMT2 Drill Pad will be located in Section 32, Township 10N, Range 2E Umiat Meridian. The proposed GMT2 Drill Pad is approximately 17 miles west south-west from the town of Nuiqsut, Alaska. A topographic map of the proposed GMT2 project area is shown in Figure 1 in Appendix A. All coordinates shown in the tables in this report will be presented in Universal Transverse Mercator, North American Datum of 1983, Zone 5 North (UTM NAD83 Zone 5N). Likewise, all modeling files contain locations for the sources in the same coordinate system.

2.2.1 Features Common to All Alternatives

Under each Alternative, other than No Action, the construction schedule would be the same and would occur during Year 0 through Year 3 of the project; however, the activities occurring during construction would vary depending on the Alternative and chosen Construction Schedule as discussed in Section 2.1. Each Alternative would utilize ice roads during construction, although the length of the ice roads would vary depending on the Alternative. Likewise, the drilling schedule would be the same under each Alternative as would the first date of production from the wells. Drilling would commence in May of Year 3 of the project and occur year round for each Alternative until all planned wells are drilled. First date of production is expected in December of Year 3.

Table 2-1

PROPOSED CONSTRUCTION SCHEDULES FOR GMT2

Construction Schedule 1	4QY0	1QY1	2QY1	3QY1	4QY1	1QY2	2QY2	3QY2	4QY2	1QY3	2QY3	3QY3	4QY3
Order Materials	X												
Ice Road Construction					X				X				
Gravel Mining/ Construction of Roads, etc						X							
Pipeline Construction						X							
Work Gravel							X	X					
GMT1 and CD1 Tie-in Work							X	X					
VSM Installation										X			
Powerline, Fiber Optic, and Facility Installation										X			
Install GMT2 Modules, Pipe racks, and Tie-Ins											X	X	
Complete Construction													X

Construction Schedule 2	4QY0	1QY1	2QY1	3QY1	4QY1	1QY2	2QY2	3QY2	4QY2	1QY3	2QY3	3QY3	4QY3
Order Materials	X												
Ice Road Construction	X				X				X				
Gravel Mining/ Construction of Roads, etc		X											
Pipeline Construction						X							
Work Gravel			X	X									
GMT1 and CD1 Tie-in Work							X	X					
VSM Installation						X							
Powerline, Fiber Optic, and Facility Installation										X			
Install GMT2 Modules, Pipe racks, and Tie-Ins	X												
Complete Construction													X

The proposed GMT2 Drill Pad would contain up to 48 wells. The proposed GMT2 Drill Pad would vary in acreage depending on the Alternative; however, it would be at least 5 feet thick in all cases. As no processing of produced fluids would occur on the proposed GMT2 Drill Pad, only minimal equipment to heat and meter the production fluids would be present. Once operational, the proposed GMT2 Drill Pad would obtain electric power from the system at the CD1 Facility. All produced fluids would be piped to the CD1 Facility in new proposed pipeline segments.

2.2.2 Features Different Between the Alternatives

Alternative B differs from Alternative A only in the GMT2 to GMT1 gravel access road and pipeline alignment and length. The access road and pipeline in Alternative B would be longer than in Alternative A. From an air emission perspective, this difference translates to slightly more emissions from construction activities for Alternative B. Drilling and operation emissions would be the same between the two Alternatives except for increased emissions from truck traffic on the longer Alternative B access road.

Alternative C differs from Alternative A in that Alternative C would not have a GMT2 to GMT1 access road, but would rather have an airstrip and support pad near the proposed GMT2 Drill Pad. A short access road would connect the proposed GMT2 Drill Pad and airstrip and support pad. Pad construction emissions would likely increase due to the extra support pad and air strip in Alternative C; however the access road construction emissions would decrease in Alternative C. While emissions from drilling and well intervention engines and heaters will be the same in Alternatives C and A, the emissions from operations that support drilling and well intervention will vary between the two Alternatives. The most prominent difference stems from Alternative C having limited offsite access resulting in increased onsite aircraft and truck traffic during drilling and well intervention phases due to the onsite airstrip and higher truck mileage. Lastly, emissions from routine operations will vary between Alternative A and C as Alternative C will have a greater amount of activity occurring at the GMT2 Drill and Support Pads rather than remotely as in Alternative A.

3 EMISSION SOURCES MODELED

Detailed information and methodologies for project emissions for Alternatives A, B, and C can be found in those inventories and associated reports (Kleinfelder and Ramboll Environ, 2017a; 2017b; 2017c). The following is an overview of the development of the emission inventories and what pollutants and sources were calculated for each Alternative.

3.1 GMT2 PROJECT EMISSIONS

The emissions inventories are divided into four (4) categories and include the following:

- Construction,
- Developmental Drilling,
- Infill Drilling, and
- Routine Operations.

The Routine Operations emissions inventory category includes emissions only from the production and operation of the GMT2 pad wells. Emissions from Routine Operations also occur during Infill Drilling and are thus included in the Infill Drilling emissions inventory category as shown in Appendix B. Therefore, modeling was not conducted for Routine Operations alone, because the Infill Drilling emission inventory category that includes Routine Operations would be a worse-case scenario. Accordingly, only three (3) scenarios were modeled for both Alternative A and Alternative C: Construction, Developmental Drilling, and Infill Drilling.

Each of the above emission categories is further divided into subcategories based on equipment and processes and generally includes emissions associated with the following:

- Fuel combustion emissions from non-mobile sources,
- On-road tailpipe emissions from vehicle traffic,
- Non-road equipment tailpipe emissions,
- Fugitive dust emissions, and
- Aircraft emissions.

For each category, emissions were estimated for the following criteria pollutants, hazardous air pollutants (HAPs), and greenhouse gas (GHG) emissions, as applicable:

- Nitrogen oxides (NOx),
- Carbon monoxide (CO),
- Sulfur dioxide (SO_2),
- Volatile organic compounds (VOC),
- Particulate matter less than 10 microns (PM_{10}),
- Particulate matter less than 2.5 microns ($PM_{2.5}$),
- Benzene,
- Toluene,
- Ethylbenzene,
- Xylenes,
- n-hexane,
- Formaldehyde, and
- GHG including carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O) reported as carbon dioxide equivalents (CO_2e). In all cases, CH_4 and N_2O are converted to CO_2e using the global warming potential (GWP) factors found in 40 CFR Part 98, Subpart A, Table A-1 of 25 and 298 respectively.

In general, emissions were calculated on both a short term and a long term basis to support hourly, daily, and annual average modeling for comparison to the National Ambient Air Quality Standards (NAAQS) and Alaska Ambient Air Quality Standards (AAAQS). Emissions were also summarized on a monthly basis based on the project schedule to identify the time periods when emissions would be highest to help define near field modeling scenarios. As described further in Section 4, emissions for each source were turned on or off for the certain months and times of day it is expecting to be operating. Furthermore, for intermittent sources, such as emergency generators and well intervention equipment, emissions were annualized for hourly rates. Emission rates for Alternative A and Alternative C for all three modeling scenarios are detailed in Tables 3-1 through 3-10 below. Rates were input into each of the models based on whether they were onsite project sources, offsite project sources, and non-project cumulative sources (herein referred to as cumulative sources). For distinction purposes, these categories have been tabulated separately within this report and in AERMOD were divided into project and non-project groups (offsite and cumulative sources). This is described in detail further within this Section.

As shown in Tables 3-1 through 3-8, except for formaldehyde, in order to reduce the number of model runs, the HAPs were modeled as a single unitized emission rate and then the AERMOD results scaled by actual emission rates of each HAP (benzene, toluene, ethylbenzene, xylenes, and n-hexane).

Table 3-1
ONSITE PROJECT EMISSIONS RATES AND ASSUMPTIONS FOR ALTERNATIVE A CONSTRUCTION SCENARIO

Source Description	Source ID	NOx Hourly (g/sec)	NOx Annual (g/sec)	CO Hourly (g/sec)	SO_2 Hourly (g/sec)	SO_2 Annual (g/sec)	PM_{10} Daily (g/sec)	$PM_{2.5}$ Daily (g/sec)	$PM_{2.5}$ Annual (g/sec)	HCHO (g/sec)	Toxics (g/sec)
Gravel Roads and Pad Construction - Construction Heaters	GRVLHT	0.034	0.034	0.0086	0.00036	0.00036	0.0041	0.0036	0.0036	0.000056	1.00
Gravel Roads and Pad Construction - Nonroad Tailpipe - Pad	PADNR	0.11	0.11	0.041	0.00016	0.00016	0.0064	0.0062	0.0062	0.0028	1.00
Gravel Roads and Pad Construction - Nonroad Tailpipe - Road	GRVLNRRD	0.52	0.52	0.19	0.00073	0.00073	0.029	0.029	0.029	0.013	1.00
Construction Camp Generators	CAMPGEN	0.49	0.31	0.43	0.00046	0.00029	0.025	0.025	0.016	0.00062	1.00
Season 1 Construction Mobile Support Tailpipe	S1CONTAIL	0.29	0.26	0.14	0.00085	0.00075	0.034	0.017	0.015	0.0054	1.00
Season 1 Road Fugitive Dust	FEROAD	0	0	0	0	0	1.30	0.46	0.46	0	0
Construction Fugitive Emissions	PADFE	0	0	0	0	0	0.052	0.0085	0.0084	0	0

1. 8-hour standard model run for CO was modeled using the maximum hour emission rate.
2. 3 hour and 24-hour standard model run for SO2 will be modeled using the maximum emission rate.
3. Annual emissions are based on the rolling 12-month total of Year 2.
4. Road emissions were divided equally among the series of volume sources.

Table 3-1
ONSITE PROJECT EMISSIONS RATES AND ASSUMPTIONS FOR ALTERNATIVE A CONSTRUCTION SCENARIO (cont.)

Source Description	Source ID	Assumption Notes
Gravel Roads and Pad Construction - Construction Heaters	GRVLHT	From the Alternative A Emission Inventory, one of each heater (construction and shop) was included for 1-hour emissions and stacks were merged. Conservatively, assumed maximum hour emission rate was the same as annual average emission rate. Emissions during February through April, August, and September.
Gravel Roads and Pad Construction - Nonroad Tailpipe - Pad	PADNR	From the Alternative A Emission Inventory, one of each piece of construction equipment. Since emissions are for all construction, they were scaled by acreage of pads and road and by hours expected to operate in a day. Maximum hourly emissions were used for annual model runs. Emissions during February through April, August, and September.
Gravel Roads and Pad Construction - Nonroad Tailpipe - Road	GRVLNRRD	From the Alternative A Emission Inventory, one of each piece of construction equipment. Since emissions are for all construction, they were scaled by acreage of pads and road and by hours expected to operate in a day. Maximum hourly emissions were used for annual model runs. Road emissions are divided equally among each road segment. Emissions during February through April, August, and September.
Construction Camp Generators	CAMPGEN	From Alternative A Emission Inventory, only one engine operating in any given hour. Emissions during January through September, November, and December.
Season 1 Construction Mobile Support Tailpipe	S1CONTAIL	From Alternative A Emission Inventory, emissions scaled based on length of modeled road by the average trip distance and divided equally among each road segment. Emissions during January through September, November, and December.
Season 1 Road Fugitive Dust	FEROAD	From Alternative A Emission Inventory, emissions were scaled based on gravel supply for wind erosion emissions and scaled based on length of modeled road by the average trip distance for truck traffic. Since most of construction will occur outside of summer months, assumed 2 trucks would be on any road segment beyond the mile nearest the pad (3 volume sources), as most construction near and on the pad will mostly be complete. Also, since most construction will already be completed, assumed less construction trucks traveling during the summer. Emissions divided equally among each road segment and emissions during June through September.
Construction Fugitive Emissions	PADFE	From the Alternative A Emission Inventory, emissions were scaled based on gravel supply. Emissions during June through September.

Table 3-2
ONSITE PROJECT EMISSIONS RATES AND ASSUMPTIONS FOR ALTERNATIVE A DEVELOPMENTAL DRILLING SCENARIO

Source Description	Source ID	NOx Hourly (g/sec)	NOx Annual (g/sec)	CO Hourly (g/sec)	SO_2 Hourly (g/sec)	SO_2 Annual (g/sec)	PM_{10} Daily (g/sec)	$PM_{2.5}$ Daily (g/sec)	$PM_{2.5}$ Annual (g/sec)	HCHO (g/sec)	Toxics (g/sec)
GMT2 Facilities Installation - Construction Heaters	GMT2HT	0.023	0.023	0.0058	0.00025	0.00025	0.0028	0.0025	0.0025	0.000039	1.00
GMT2 Facilities Installation - Nonroad Tailpipe	GMT2NR	0.11	0.11	0.049	0.00015	0.00015	0.0071	0.0069	0.0069	0.0029	1.00
Construction Camp Generators	CAMPGEN	0.49	0.33	0.43	0.00046	0.00031	0.025	0.025	0.017	0.00062	1.00
Season 2 Construction Mobile Support Tailpipe	S2CONTAIL	0.21	0.21	0.11	0.00059	0.00058	0.025	0.012	0.012	0.0031	1.00
Construction Fugitive Emissions	CONFE FEROAD	0	0	0	0	0	0.72	0.085	0.085	0	0
Drill Rig - Primary Engine	DRILLPE	0.37	0.36	0.11	0.00056	0.00056	0.015	0.015	0.015	0.000026	1.00
Drill Rig - Cement Pump #1	DRILLCP1	0.019	0.0011	0.010	0.000011	0.00000061	0.00057	0.00057	0.000032	0.000088	1.00
Drill Rig - Cement Pump #2	DRILLCP2	0.019	0.0011	0.010	0.000011	0.00000061	0.00057	0.00057	0.000032	0.000088	1.00
Drill Rig - Boiler #1	DRILLB1	0.061	0.061	0.015	0.00065	0.00064	0.0073	0.0065	0.0064	0.00010	1.00
Drill Rig - Boiler #2	DRILLB2	0.061	0.061	0.015	0.00065	0.00064	0.0073	0.0065	0.0064	0.00010	1.00
Drill Rig - Air Heater #1	DRILLAH1	0.073	0.072	0.018	0.00078	0.00077	0.0087	0.0078	0.0077	0.00012	1.00
Drill Rig - Air Heater #2	DRILLAH2	0.036	0.036	0.0091	0.00039	0.00038	0.0043	0.0039	0.0038	0.000060	1.00
Drill Rig - Mud Pit Heater	DRILLMP	0.055	0.054	0.014	0.00058	0.00058	0.0065	0.0058	0.0058	0.000090	1.00
Drilling Backup Power Generator	DRILLEG	0.076	0.076	0.081	0.000060	0.000060	0.0064	0.0064	0.0064	0.000081	1.00
Drilling Non-Mobile Support Equipment	DRILLNR	0.14	0.14	0.079	0.00089	0.00089	0.015	0.014	0.014	0.00016	1.00
Drilling Mobile Equipment Tailpipe	DRILLM	0.011	0.016	0.0080	0.000049	0.000049	0.0021	0.00094	0.00093	0.00094	1.00

Source Description	Source ID	NOx Hourly (g/sec)	NOx Annual (g/sec)	CO Hourly (g/sec)	SO_2 Hourly (g/sec)	SO_2 Annual (g/sec)	PM_{10} Daily (g/sec)	$PM_{2.5}$ Daily (g/sec)	$PM_{2.5}$ Annual (g/sec)	HCHO (g/sec)	Toxics (g/sec)
Drilling Fugitive Dust	FEROAD	0	0	0	0	0	1.21	0.12	0.11	0	0
Drilling Well Flowback and Flaring	DRILLFLARE	0.068	0.0069	0.31	0.0039	0.00038	0.000048	0.000048	0.000048	0	1.00
Well Intervention Coil Tubing Equipment #1	FRACENG1	0.022	0.022	0.011	0.000057	0.000057	0.0010	0.00088	0.00088	0.00000087	1.00
Well Intervention Coil Tubing Equipment #2	FRACENG2	0.022	0.022	0.011	0.000057	0.000057	0.0010	0.00088	0.00088	0.00000087	1.00
Well Intervention Non-Mobile Support Equipment	FRACNR	0.0054	0.0054	0.0030	0.000034	0.000034	0.00059	0.00055	0.00055	0.00018	1.00
Well Intervention Mobile Equipment Tailpipe	DRILLM	0.00042	0.052	0.00035	0.0000013	0.00016	0.0075	0.0037	0.0037	0.0000081	1.00
Well Intervention Fugitive Dust	FEROAD	0	0	0	0	0	0.20	0.030	0.028	0	0
Line Heater	OPSLH	0.15	0.15	0.13	0.0055	0.0054	0.011	0.011	0.010	0.00011	1.00
GMT2 Pad Emergency Generator	OPSEMGEN	0.10	0.10	0.057	0.00024	0.00024	0.0032	0.0032	0.0032	0.0000054	1.00
Operations Mobile Equipment Tailpipe	OPSTAIL	0.00077	0.00076	0.00076	0.0000025	0.0000025	0.000086	0.000041	0.000040	0.000016	1.00

1. 8-hour standard model run for CO was modeled using the maximum hour emission rate.
2. 3 hour and 24-hour standard model run for SO2 will be modeled using the maximum emission rate.
3. Annual emissions are based on the rolling 12-month total of Year 3.
4. Road emissions were divided equally among the series of volume sources.

Table 3-2
ONSITE PROJECT EMISSIONS RATES AND ASSUMPTIONS FOR ALTERNATIVE A DEVELOPMENTAL DRILLING SCENARIO (cont.)

Source Description	Source ID	Assumption Notes
GMT2 Facilities Installation - Construction Heaters	GMT2HT	From Alternative A Emission Inventory and stacks merged to one point. Maximum hourly emissions were used for annual model runs. Emissions during April through December.
GMT2 Facilities Installation - Nonroad Tailpipe	GMT2NR	From Alternative A Emission Inventory, one of each piece of construction equipment for hourly emissions and emissions scaled by hours of operation per day. Maximum hourly emissions were used for annual model runs. Emissions during April through December.
Construction Camp Generators	CAMPGEN	From Alternative A Emission inventory, only one engine operating in an hour. Emissions during January through November.
Season 2 Construction Mobile Support Tailpipe	S2CONTAIL	From Alternative A Emission Inventory, emissions scaled based on length of modeled road by the average trip distance and divided equally among each road segment. Emissions during January through December.
Fugitive Dust Emissions	CONFE FEROAD	From the Alternative A Emission Inventory, emissions were scaled based on gravel supply. Since most of construction will occur outside of summer months, assumed 1 truck would be on any road segment and assumed less construction trucks traveling during the summer. Emissions scaled based on length of modeled road by the average trip distance and divided equally among each road segment. Since these emissions occur during the same time and at the same location, emissions on the road were combined with Drilling Fugitive Dust and Well Intervention Fugitive Dust under the same Source ID (FEROAD). Emissions during June through September.
Drill Rig - Primary Engine	DRILLPE	From Alternative A Emission Inventory. Emissions during May through December.
Drill Rig - Cement Pump #1	DRILLCP1	From Alternative A Emission Inventory, emissions annualized since only operate 500 hours per year. Emissions during May through December.
Drill Rig - Cement Pump #2	DRILLCP2	From Alternative A Emission Inventory, emissions annualized since only operate 500 hours per year. Emissions during May through December.
Drill Rig - Boiler #1	DRILLB1	From Alternative A Emission Inventory. Emissions during May through December.
Drill Rig - Boiler #2	DRILLB2	From Alternative A Emission Inventory. Emissions during May through December.
Drill Rig - Air Heater #1	DRILLAH1	From Alternative A Emission Inventory. Emissions during May through December.
Drill Rig - Air Heater #2	DRILLAH2	From Alternative A Emission Inventory. Emissions during May through December.
Drill Rig - Mud Pit Heater	DRILLMP	From Alternative A Emission Inventory. Emissions during May through December.
Drilling Backup Power Generator	DRILLEG	From Alternative A Emission Inventory, emissions annualized since only operate 4 days per month. Emissions during May through December.
Drilling Non-Mobile Support Equipment	DRILLNR	Based on notes from CPAI on 6/29/2017, emissions for 4 lighting engines, 1 snow melter, 1 welder/compressor engine, and 2 portable heaters included. Emissions during May through December.

Source Description	Source ID	Assumption Notes
Drilling Mobile Equipment Tailpipe	DRILLM	From Alternative A Emission Inventory, emissions scaled based on length of modeled road by the average trip distance and divided equally among each road segment. Emissions during May through December. Since emissions occur during the same time and at the same location, these emissions were combined with Well Intervention Mobile Support Equipment under the same Source ID.
Drilling Fugitive Dust	FEROAD	From Alternative A Emission Inventory, emissions divided equally among each road segment. Emissions during June through September. Since these emissions occur during the same time and at the same location, these emissions were combined with Well Intervention Fugitive Dust and Season 2 Construction Fugitive Dust on the road under the same Source ID.
Drilling Well Flowback and Flaring	DRILLFLARE	From Alternative A Emission Inventory. Emissions during May through December.
Well Intervention Coil Tubing Equipment #1	FRACENG1	From Alternative A Emission Inventory, only included coil tubing equipment similar to assumption made in GMT1 and divided between two Source IDs. Emissions during May through December per CPAI comment on 6/29/2017. Emissions annualized since well intervention operations will only take place for 224 hours per year.
Well Intervention Coil Tubing Equipment #2	FRACENG2	From Alternative A Emission Inventory, only included coil tubing equipment similar to assumption made in GMT1 and divided between two Source IDs. Emissions during May through December per CPAI comment on 6/29/2017. Emissions annualized since well intervention operations will only take place for 224 hours per year.
Well Intervention Non-Mobile Support Equipment	FRACNR	Based on notes from CPAI on 6/29/2017, emissions for 4 lighting engines, 1 snow melter, 1 welder/compressor engine, and 2 portable heaters included. Emissions annualized since well intervention operations will only take place for 224 hours per year. Emissions during May through December.
Well Intervention Mobile Equipment Tailpipe	DRILLM	From Alternative A Emission Inventory, emissions scaled based on length of modeled road by the average trip distance and divided equally among each road segment. Emissions annualized since well intervention operations will only take place for 224 hours per year. Emissions during May through December. Since emissions occur during the same time and at the same location, these emissions were combined with Drilling Mobile Support Equipment under the same Source ID.
Well Intervention Fugitive Dust	FEROAD	From Alternative A Emission Inventory, emissions divided equally among each road segment. Emissions annualized since well intervention operations will only take place for 224 hours per year. Emissions during June through September. Since these emissions occur during the same time and at the same location, these emissions were combined with Drilling Fugitive Dust and Season 2 Construction Fugitive Dust on the road under the same Source ID.
Line Heater	OPSLH	From Alternative A Emission Inventory, emissions during December.
Operations Mobile Equipment Tailpipe	OPSTAIL	From Alternative A Emission Inventory, emissions scaled based on length of modeled road by the average trip distance and divided equally among each road segment. Emissions during December therefore no fugitive dust.
GMT2 Pad Emergency Generator	OPSEMGEN	From Alternative A Emission Inventory, emissions annualized for 42 hours per month. Emissions during December.

Table 3-3
ONSITE PROJECT EMISSIONS RATES AND ASSUMPTIONS FOR ALTERNATIVE A INFILL DRILLING SCENARIO

Source Description	Source ID	NOx Hourly (g/sec)	NOx Annual (g/sec)	CO Hourly (g/sec)	SO_2 Hourly (g/sec)	SO_2 Annual (g/sec)	PM_{10} Daily (g/sec)	$PM_{2.5}$ Daily (g/sec)	$PM_{2.5}$ Annual (g/sec)	HCHO (g/sec)	Toxics (g/sec)
Drill Rig - Primary Engine	DRILLPE	0.37	0.37	0.11	0.00056	0.00056	0.015	0.015	0.015	0.000026	1.00
Drill Rig - Cement Pump #1	DRILLCP1	0.019	0.0011	0.010	0.000011	0.00000061	0.00057	0.00057	0.000033	0.000088	1.00
Drill Rig - Cement Pump #2	DRILLCP2	0.019	0.0011	0.010	0.000011	0.00000061	0.00057	0.00057	0.000033	0.000088	1.00
Drill Rig - Boiler #1	DRILLB1	0.061	0.061	0.015	0.00065	0.00065	0.0073	0.0065	0.0065	0.00010	1.00
Drill Rig - Boiler #2	DRILLB2	0.061	0.061	0.015	0.00065	0.00065	0.0073	0.0065	0.0065	0.00010	1.00
Drill Rig - Air Heater #1	DRILLAH1	0.073	0.073	0.018	0.00078	0.00078	0.0087	0.0078	0.0078	0.00012	1.00
Drill Rig - Air Heater #2	DRILLAH2	0.036	0.036	0.0091	0.00039	0.00039	0.0043	0.0039	0.0039	0.000060	1.00
Drill Rig - Mud Pit Heater	DRILLMP	0.055	0.055	0.014	0.00058	0.00058	0.0065	0.0058	0.0058	0.000090	1.00
Drilling Non-Mobile Support Equipment	DRILLNR	0.14	0.14	0.079	0.00089	0.00089	0.015	0.014	0.014	0.00016	1.00
Drilling Backup Power Generator	DRILLEG	0.076	0.076	0.081	0.000061	0.000061	0.0065	0.0065	0.0065	0.000082	1.00
Drilling Mobile Equipment Tailpipe	TAIL	0.011	0.016	0.0078	0.000048	0.000048	0.0020	0.00092	0.00092	0.00024	1.00
Drilling Fugitive Dust	FEROAD	0	0	0	0	0	1.19	0.12	0.11	0	0
Well Intervention Coil Tubing Equipment #1	FRACENG1	0.015	0.015	0.0074	0.000038	0.000038	0.00068	0.00059	0.00059	0.00000058	1.00
Well Intervention Coil Tubing Equipment #2	FRACENG2	0.015	0.015	0.0074	0.000038	0.000038	0.00068	0.00059	0.00059	0.00000058	1.00
Well Intervention Non-Mobile Support Equipment	FRACNR	0.0036	0.0036	0.0020	0.000023	0.000023	0.00040	0.00037	0.00037	0.00018	1.00

Source Description	Source ID	NOx Hourly (g/sec)	NOx Annual (g/sec)	CO Hourly (g/sec)	SO_2 Hourly (g/sec)	SO_2 Annual (g/sec)	PM_{10} Daily (g/sec)	$PM_{2.5}$ Daily (g/sec)	$PM_{2.5}$ Annual (g/sec)	HCHO (g/sec)	Toxics (g/sec)
Well Intervention Mobile Equipment Tailpipe	TAIL	0.00028	0.052	0.00023	0.00000089	0.00016	0.0075	0.0037	0.0037	0.0000054	1.00
Well Intervention Fugitive Dust	FEROAD	0	0	0	0	0	0.30	0.030	0.028	0	0
Line Heater	OPSLH	0.15	0.15	0.13	0.0055	0.0055	0.011	0.011	0.010	0.00011	1.00
Pigging Venting	OPSPV	0	0	0	0	0	0	0	0	0	1.00
Fugitive Components	OPSFUG	0	0	0	0	0	0	0	0	0	1.00
GMT2 Pad Emergency Generator	OPSEMGEN	0.10	0.10	0.057	0.00024	0.00024	0.0032	0.0032	0.0032	0.0000054	1.00
Operations Mobile Equipment Tailpipe	TAIL	0.00077	0.00077	0.00076	0.0000025	0.0000025	0.000086	0.000041	0.000041	0.000016	1.00
Operations Fugitive Dust	FEROAD	0	0	0	0	0	0.066	0.0066	0.0066	0	0
Wind Erosion Fugitive Dust	PADFE FEROAD	0	0	0	0	0	0.29	0.045	0.045	0	0

1. 8-hour standard model run for CO was modeled using the maximum hour emission rate.
2. 3 hour and 24-hour standard model run for SO2 will be modeled using the maximum emission rate.
3. Annual emissions are based on the rolling 12-month total of Year 4.
4. Road emissions were divided equally among the series of volume sources.

Table 3-3
ONSITE PROJECT EMISSIONS RATES AND ASSUMPTIONS FOR ALTERNATIVE A INFILL DRILLING SCENARIO (cont.)

Source Description	Source ID	Assumption Notes
Drill Rig - Primary Engine	DRILLPE	From Alternative A Emission Inventory, emissions during January through December.
Drill Rig - Cement Pump #1	DRILLCP1	From Alternative A Emission Inventory, emissions annualized since only operate 500 hrs per year. Emissions during January through December.
Drill Rig - Cement Pump #2	DRILLCP2	From Alternative A Emission Inventory, emissions annualized since only operate 500 hrs per year. Emissions during January through December.
Drill Rig - Boiler #1	DRILLB1	From Alternative A Emission Inventory, emissions during January through December.
Drill Rig - Boiler #2	DRILLB2	From Alternative A Emission Inventory, emissions during January through December.
Drill Rig - Air Heater #1	DRILLAH1	From Alternative A Emission Inventory, emissions during January through December.
Drill Rig - Air Heater #2	DRILLAH2	From Alternative A Emission Inventory, emissions during January through December.
Drill Rig - Mud Pit Heater	DRILLMP	From Alternative A Emission Inventory, emissions during January through December.
Drilling Non-Mobile Support Equipment	DRILLNR	Based on notes from CPAI on 6/29/2017, emissions for 4 lighting engines, 1 snow melter, 1 welder/compressor engine, and 2 portable heaters included. Emissions during January through December.
Drilling Backup Power Generator	DRILLEG	From Alternative A Emission Inventory, emissions annualized since only operate 4 days per month. Emissions during January through December.
Drilling Mobile Equipment Tailpipe	TAIL	From Alternative A Emission Inventory, emissions scaled based on length of modeled road by the average trip distance and divided equally among each road segment. Emissions during January through December. Since emissions occur during the same time and at the same location, these emissions were combined with Well Intervention Mobile Support Equipment and Operations Mobile Equipment under the same Source ID.
Drilling Fugitive Dust	FEROAD	From Alternative A Emission Inventory, emissions divided equally among each road segment. Emissions during June through September. Since these emissions occur during the same time and at the same location, these emissions were combined with Well Intervention Fugitive Dust and Operations Fugitive Dust on the road under the same Source ID.
Well Intervention Coil Tubing Equipment #1	FRACENG1	From Alternative A Emission Inventory, only included coil tubing equipment similar to assumption made in GMT1 and divided between two Source IDs. Emissions during January through December per CPAI comment on 6/29/2017. Emissions annualized since well intervention operations will only take place for 224 hours per year.

Source Description	Source ID	Assumption Notes
Well Intervention Coil Tubing Equipment #2	FRACENG2	From Alternative A Emission Inventory, only included coil tubing equipment similar to assumption made in GMT1 and divided between two Source IDs. Emissions during January through December per CPAI comment on 6/29/2017. Emissions annualized since well intervention operations will only take place for 224 hours per year.
Well Intervention Non-Mobile Support Equipment	FRACNR	Based on notes from CPAI on 6/29/2017, emissions for 4 lighting engines, 1 snow melter, 1 welder/compressor engine, and 2 portable heaters included. Emissions annualized since well intervention operations will only take place for 224 hours per year. Emissions during January through December.
Well Intervention Mobile Equipment Tailpipe	TAIL	From Alternative A Emission Inventory, emissions scaled based on length of modeled road by the average trip distance and divided equally among each road segment. Emissions annualized since well intervention operations will only take place for 224 hours per year. Emissions during January through December. Since emissions occur during the same time and at the same location, these emissions were combined with Drilling Mobile Support Equipment and Operations Mobile Equipment under the same Source ID.
Well Intervention Fugitive Dust	FEROAD	From Alternative A Emission Inventory, emissions divided equally among each road segment. Emissions annualized since well intervention operations will only take place for 224 hours per year. Emissions during June through September. Since these emissions occur during the same time and at the same location, these emissions were combined with Drilling Fugitive Dust and Operations Fugitive Dust on the road under the same Source ID.
Line Heater	OPSLH	From Alternative A Emission Inventory, emissions during January through December.
Pigging Venting	OPSPV	From Alternative A Emission Inventory, emissions annualized for 1 hour of operation per year. Emissions during January through December.
Fugitive Components	OPSFUG	From Alternative A Emissions Inventory, emissions during January through December.
GMT2 Pad Emergency Generator	OPSEMGEN	From Alternative A Emission Inventory, emissions annualized for 42 hours per month. Emissions during January through December.
Operations Mobile Equipment Tailpipe	TAIL	From Alternative A Emission Inventory, emissions scaled based on length of modeled road by the average trip distance and divided equally among each road segment. Emissions during January through December. Since emissions occur during the same time and at the same location, these emissions were combined with Drilling Mobile Support Equipment and Well Intervention Mobile Equipment under the same Source ID.
Operations Fugitive Dust	FEROAD	From Alternative A Emission Inventory, emissions divided equally among each road segment. Emissions during June through September. Since these emissions occur during the same time and at the same location, these emissions were combined with Drilling Fugitive Dust and Well Intervention Fugitive Dust on the road under the same Source ID.
Wind Erosion Fugitive Dust	PADFE	From the Alternative A Emission Inventory, emissions were scaled based on gravel supply. Emissions during June through September.

Table 3-4
ONSITE PROJECT EMISSIONS RATES AND ASSUMPTIONS FOR ALTERNATIVE C CONSTRUCTION SCENARIO

Source Description	Source ID	NOx Hourly (g/sec)	NOx Annual (g/sec)	CO Hourly (g/sec)	SO_2 Hourly (g/sec)	SO_2 Annual (g/sec)	PM_{10} Daily (g/sec)	$PM_{2.5}$ Daily (g/sec)	$PM_{2.5}$ Annual (g/sec)	HCHO (g/sec)	Toxics (g/sec)
Gravel Roads and Pad Construction - Construction Heaters	GRVLHT	0.048	0.040	0.012	0.00051	0.00043	0.0057	0.0051	0.0043	0.000079	1.00
Gravel Roads and Pad Construction - Nonroad Tailpipe - Pad	PADNR	0.18	0.18	0.067	0.00026	0.00026	0.011	0.010	0.010	0.0045	1.00
Gravel Roads and Pad Construction - Nonroad Tailpipe - Road	GRVLNRRD	0.070	0.070	0.025	0.00010	0.00010	0.0039	0.0038	0.0038	0.0017	1.00
Gravel Roads and Pad Construction - Nonroad Tailpipe - Occupied Structure Pad	OSPNR	0.18	0.18	0.064	0.00025	0.00025	0.011	0.0097	0.0097	0.0044	1.00
Gravel Roads and Pad Construction - Nonroad Tailpipe - Air Access Facility	AAFNR	0.46	0.46	0.16	0.00065	0.00065	0.027	0.025	0.025	0.011	1.00
Season 1 Aircraft Activity (<167 ft)	AIRCRAFT1	6.36E-03	3.37E-03	2.82E-02	1.33E-03	6.82E-04	2.53E-04	2.53E-04	1.40E-04	2.69E-04	0.333
Season 1 Aircraft Activity (167 < x < 500 ft)	AIRCRAFT2	6.36E-03	3.37E-03	2.82E-02	1.33E-03	6.82E-04	2.53E-04	2.53E-04	1.40E-04	2.69E-04	0.333
Season 1 Aircraft Activity (500 < x < 833 ft)	AIRCRAFT3	6.36E-03	3.37E-03	2.82E-02	1.33E-03	6.82E-04	2.53E-04	2.53E-04	1.40E-04	2.69E-04	0.333
Construction Camp Generators	CAMPGEN	0.49	0.43	0.43	0.00046	0.00040	0.025	0.025	0.021	0.00062	1.00
Season 1 Construction Mobile Support Tailpipe	S1CONTAIL	0.039	0.034	0.018	0.00011	0.00010	0.0049	0.0023	0.0020	0.00074	1.00
Construction Fugitive Emissions	PADFE OSPFE AAFFE FEROAD	0	0	0	0	0	1.18	0.18	0.17	0	0

1. 8-hour standard model run for CO was modeled using the maximum hour emission rate.
2. 3 hour and 24-hour standard model run for SO2 will be modeled using the maximum emission rate.
3. Annual emissions are based on the rolling 12-month total of Year 2.
4. Road emissions were divided equally among the series of volume sources.

Table 3-4
ONSITE PROJECT EMISSIONS RATES AND ASSUMPTIONS FOR ALTERNATIVE C CONSTRUCTION SCENARIO (cont.)

Source Description	Source ID	Assumption Notes
Gravel Roads and Pad Construction - Construction Heaters	GRVLHT	From the Alternative C Emission Inventory, one of each heater (construction and shop) was included for 1-hour emissions and stacks were merged. Maximum hourly emissions were used for annual model runs. Emissions during February through April, August, and September.
Gravel Roads and Pad Construction - Nonroad Tailpipe - Pad	PADNR	From the Alternative C Emission Inventory, one of each piece of construction equipment. Since emissions are for all construction, they were scaled by acreage of pads, road, and air access facility and by hours of operation per day. Maximum hourly emissions were used for annual model runs. Emissions during February through April, August, and September.
Gravel Roads and Pad Construction - Nonroad Tailpipe - Road	GRVLNRRD	From the Alternative C Emission Inventory, one of each piece of construction equipment. Since emissions are for all construction, they were scaled by acreage of pads, road, and air access facility and by hours of operation per day. Emissions during February through April, August, and September.
Gravel Roads and Pad Construction - Nonroad Tailpipe - Occupied Structure Pad	OSPNR	From the Alternative C Emission Inventory, one of each piece of construction equipment. Since emissions are for all construction, they were scaled by acreage of pads, road, and air access facility. Maximum hourly emissions were used for annual model runs. Emissions during February through April, August, and September.
Gravel Roads and Pad Construction - Nonroad Tailpipe - Air Access Facility	AAFNR	From the Alternative C Emission Inventory, one of each piece of construction equipment. Since emissions are for all construction, they were scaled by acreage of pads, road, and air access facility. Maximum hourly emissions were used for annual model runs. Emissions during February through April, August, and September.
Season 1 Aircraft Activity (<167 ft)	AIRCRAFT1	From Alternative C Emission Inventory, emissions divided equally between 3 heights on a runway. Emissions during April through September, November, and December.
Season 1 Aircraft Activity (167 < x < 500 ft)	AIRCRAFT2	From Alternative C Emission Inventory, emissions divided equally between 3 heights on a runway. Emissions during April through September, November, and December.
Season 1 Aircraft Activity (500 < x < 833 ft)	AIRCRAFT3	From Alternative C Emission Inventory, emissions divided equally between 3 heights on a runway. Emissions during April through September, November, and December.
Construction Camp Generators	CAMPGEN	From Alternative C Emission Inventory, only one engine operating in any given hour. Emissions during January through September, November, and December.
Season 1 Construction Mobile Support Tailpipe	S1CONTAIL	From Alternative C Emission Inventory, emissions scaled based on length of modeled road by the average trip distance and divided equally among each road segment. Emissions during January through September, November, and December.
Construction Fugitive Emissions	PADFE OSPFE AAFFE FEROAD	From the Alternative C Emission Inventory, emissions were scaled based on gravel supply. Fugitive dust on access road will not occur on the road near the pad during summer months based on similar assumption in GMT1. Emissions during June through September.

Table 3-5
ONSITE PROJECT EMISSIONS RATES AND ASSUMPTIONS FOR ALTERNATIVE C DEVELOPMENTAL DRILLING SCENARIO

Source Description	Source ID	NOx Hourly (g/sec)	NOx Annual (g/sec)	CO Hourly (g/sec)	SO_2 Hourly (g/sec)	SO_2 Annual (g/sec)	PM_{10} Daily (g/sec)	$PM_{2.5}$ Daily (g/sec)	$PM_{2.5}$ Annual (g/sec)	HCHO (g/sec)	Toxics (g/sec)
GMT2 Facilities Installation - Construction Heaters	GMT2HT	0.047	0.047	0.012	0.00050	0.00050	0.0056	0.0050	0.0050	0.000077	1.00
GMT2 Facilities Installation - Nonroad Tailpipe	GMT2NR1&2	0.24	0.24	0.12	0.00033	0.00033	0.018	0.018	0.018	0.0070	1.00
Construction Camp Generators	CAMPGEN	0.49	0.33	0.43	0.00046	0.00031	0.025	0.025	0.017	0.00062	1.00
Season 2 Aircraft Activity (<167 ft)	AIRCRAFT1	2.01E-02	1.24E-02	1.16E-01	2.79E-03	2.79E-03	4.16E-03	4.16E-03	2.68E-03	5.29E-03	0.333
Season 2 Aircraft Activity (167 < x < 500 ft)	AIRCRAFT2	2.01E-02	1.24E-02	1.16E-01	2.79E-03	2.79E-03	4.16E-03	4.16E-03	2.68E-03	5.29E-03	0.333
Season 2 Aircraft Activity (500 < x < 833 ft)	AIRCRAFT3	2.01E-02	1.24E-02	1.16E-01	2.79E-03	2.79E-03	4.16E-03	4.16E-03	2.68E-03	5.29E-03	0.333
Season 2 Construction Mobile Support Tailpipe	S2CONTAIL	0.028	0.028	0.014	0.000080	0.000079	0.0035	0.0016	0.0016	0.00026	1.00
Fugitive Dust Emissions	PADFE OSPFE AAFFE FEROAD	0	0	0	0	0	1.18	0.18	0.17	0	0
Drill Rig - Primary Engine	DRILLPE	0.37	0.36	0.11	0.00056	0.00056	0.015	0.015	0.015	0.000026	1.00
Drill Rig - Cement Pump #1	DRILLCP1	0.019	0.0011	0.010	0.000011	0.00000061	0.00057	0.00057	0.000032	0.000088	1.00
Drill Rig - Cement Pump #2	DRILLCP2	0.019	0.0011	0.010	0.000011	0.00000061	0.00057	0.00057	0.000032	0.000088	1.00
Drill Rig - Boiler #1	DRILLB1	0.061	0.061	0.015	0.00065	0.00064	0.0073	0.0065	0.0064	0.00010	1.00
Drill Rig - Boiler #2	DRILLB2	0.061	0.061	0.015	0.00065	0.00064	0.0073	0.0065	0.0064	0.00010	1.00
Drill Rig - Air Heater #1	DRILLAH1	0.073	0.072	0.018	0.00078	0.00077	0.0087	0.0078	0.0077	0.00012	1.00
Drill Rig - Air Heater #2	DRILLAH2	0.036	0.036	0.0091	0.00039	0.00038	0.0043	0.0039	0.0038	0.000060	1.00

Source Description	Source ID	NOx Hourly (g/sec)	NOx Annual (g/sec)	CO Hourly (g/sec)	SO_2 Hourly (g/sec)	SO_2 Annual (g/sec)	PM_{10} Daily (g/sec)	$PM_{2.5}$ Daily (g/sec)	$PM_{2.5}$ Annual (g/sec)	HCHO (g/sec)	Toxics (g/sec)
Drill Rig - Mud Pit Heater	DRILLMP	0.055	0.054	0.014	0.00058	0.00058	0.0065	0.0058	0.0058	0.000090	1.00
Drilling Backup Power Generator	DRILLEG	0.076	0.076	0.081	0.000060	0.000060	0.0064	0.0064	0.0064	0.000081	1.00
Drilling Non-Mobile Support Equipment	DRILLNR	0.14	0.14	0.079	0.00089	0.00089	0.016	0.015	0.015	0.00018	1.00
Drilling Mobile Equipment Tailpipe	DRILLM	0.017	0.017	0.0079	0.000051	0.000051	0.0022	0.0010	0.00098	0.00026	1.00
Drilling Fugitive Dust	DRILLFE	0	0	0	0	0	0.13	0.013	0.010	0	0
Drilling Well Flowback and Flaring	DRILLFLARE	0.068	0.0069	0.31	0.0039	0.00038	0.000048	0.000048	0.000048	0	1.00
Well Intervention Coil Tubing Equipment #1	FRACENG1	0.36	0.36	0.18	0.00093	0.00093	0.016	0.014	0.014	0.00013	1.00
Well Intervention Coil Tubing Equipment #2	FRACENG2	0.36	0.36	0.18	0.00093	0.00093	0.016	0.014	0.014	0.00013	1.00
Well Intervention Non-Mobile Support Equipment	FRACNR	0.14	0.14	0.079	0.00089	0.00089	0.015	0.014	0.014	0.00018	1.00
Well Intervention Mobile Equipment Tailpipe	FRACM	0.023	0.023	0.0115	0.000071	0.000071	0.0029	0.0014	0.0014	0.00037	1.00
Well Intervention Fugitive Dust	FRACFE	0	0	0	0	0	0	0	0	0	0
Occupied Structure Pad - Incinerator	OPSINC	0.062	0.062	0.032	0.00078	0.00078	0.10	0.10	0.10	0.000027	1.00
Occupied Structure Pad - Emergency Generator	OPSEG	0.056	0.056	0.056	0.00023	0.00023	0.00064	0.00064	0.00064	0.0000053	1.00
Line Heater	OPSLH	0.15	0.15	0.13	0.0055	0.0055	0.011	0.011	0.010	0.00011	1.00
Operations Mobile Equipment Tailpipe	OPSTAIL	0.0015	0.0015	0.0016	0.0000049	0.0000048	0.00016	0.000078	0.000077	0.000033	1.00
GMT2 Pad Emergency Generator	OPSEMGEN	0.10	0.10	0.057	0.00024	0.00024	0.0032	0.0032	0.0032	0.0000054	1.00

1. 8-hour standard model run for CO was modeled using the maximum hour emission rate.
2. 3 hour and 24-hour standard model run for SO2 will be modeled using the maximum emission rate.
3. Annual emissions are based on the rolling 12-month total of Year 3.
4. Road emissions were divided equally among the series of volume sources.

Table 3-5
ONSITE PROJECT EMISSIONS RATES AND ASSUMPTIONS FOR ALTERNATIVE C DEVELOPMENTAL DRILLING SCENARIO (cont.)

Source Description	Source ID	Assumption Notes
GMT2 Facilities Installation - Construction Heaters	GMT2HT	From Alternative C Emission Inventory and stacks merged to one point. Maximum hourly emissions were used for annual model runs. Emissions during April through December.
GMT2 Facilities Installation - Nonroad Tailpipe	GMT2NR1&2	From Alternative C Emission Inventory, one of each piece of construction equipment for hourly emissions divided equally among the Drill Pad (1) and the Occupied Structure Pad (2) and scaled by hours of operation per day. Maximum hourly emissions were used for annual model runs. Emissions during April through December.
Construction Camp Generators	CAMPGEN	From Alternative C Emission inventory, only one engine operating in an hour. Emissions during January through November.
Season 2 Aircraft Activity (<167 ft)	AIRCRAFT1	From Alternative C Emission Inventory, emissions divided equally between 3 heights on a runway. Emissions during January through December.
Season 2 Aircraft Activity (167 < x < 500 ft)	AIRCRAFT2	From Alternative C Emission Inventory, emissions divided equally between 3 heights on a runway. Emissions during January through December.
Season 2 Aircraft Activity (500 < x < 833 ft)	AIRCRAFT3	From Alternative C Emission Inventory, emissions divided equally between 3 heights on a runway. Emissions during January through December.
Season 2 Construction Mobile Support Tailpipe	S2CONTAIL	From Alternative C Emission Inventory, emissions scaled based on length of modeled road by the average trip distance and divided equally among each road segment. Emissions during January through December.
Fugitive Dust Emissions	PADFE OSPFE AAFFE	From the Alternative C Emission Inventory, emissions were scaled based on gravel supply. Fugitive dust will not occur on the access road near the pad as most work will be on pipelines and powerlines. Emissions during June through September.
Drill Rig - Primary Engine	DRILLPE	From Alternative C Emission Inventory. Emissions during May through December.
Drill Rig - Cement Pump #1	DRILLCP1	From Alternative C Emission Inventory, emissions annualized since only operate 500 hours per year. Emissions during May through December.
Drill Rig - Cement Pump #2	DRILLCP2	From Alternative C Emission Inventory, emissions annualized since only operate 500 hours per year. Emissions during May through December.
Drill Rig - Boiler #1	DRILLB1	From Alternative C Emission Inventory. Emissions during May through December.
Drill Rig - Boiler #2	DRILLB2	From Alternative C Emission Inventory. Emissions during May through December.
Drill Rig - Air Heater #1	DRILLAH1	From Alternative C Emission Inventory. Emissions during May through December.
Drill Rig - Air Heater #2	DRILLAH2	From Alternative C Emission Inventory. Emissions during May through December.
Drill Rig - Mud Pit Heater	DRILLMP	From Alternative C Emission Inventory. Emissions during May through December.

Source Description	Source ID	Assumption Notes
Drilling Backup Power Generator	DRILLEG	From Alternative C Emission Inventory, emissions annualized since only operate 4 days per month. Emissions during May through December.
Drilling Non-Mobile Support Equipment	DRILLNR	Based on notes from CPAI on 6/29/2017, emissions for 4 lighting engines, 1 snow melter, 1 welder/compressor engine, and 2 portable heaters included. Emissions during May through December.
Drilling Mobile Equipment Tailpipe	DRILLM	From Alternative C Emission Inventory, emissions scaled based on length of modeled road by the average trip distance and divided equally among each road segment. Emissions during May through December.
Drilling Fugitive Dust	DRILLFE	From Alternative C Emission Inventory, emissions divided equally among each road segment. Emissions during June through September.
Drilling Well Flowback and Flaring	DRILLFLARE	From Alternative C Emission Inventory. Emissions during May through December.
Well Intervention Coil Tubing Equipment #1	FRACENG1	From Alternative C Emission Inventory, only included coil tubing equipment similar to assumption made in GMT1 and divided between two Source IDs. Emissions during December per CPAI comment on 6/29/2017 that well interventions would occur during ice road season. Emissions annualized for final report since well intervention operations will only take place for 224 hours per year.
Well Intervention Coil Tubing Equipment #2	FRACENG2	From Alternative C Emission Inventory, only included coil tubing equipment similar to assumption made in GMT1 and divided between two Source IDs. Emissions during December per CPAI comment on 6/29/2017 that well interventions would occur during ice road season. Emissions annualized for final report since well intervention operations will only take place for 224 hours per year.
Well Intervention Non-Mobile Support Equipment	FRACNR	Based on notes from CPAI on 6/29/2017, emissions for 4 lighting engines, 1 snow melter, 1 welder/compressor engine, and 2 portable heaters included. Emissions during December.
Well Intervention Mobile Equipment Tailpipe	FRACM	From Alternative C Emission Inventory, emissions scaled based on length of modeled road by the average trip distance and divided equally among each road segment. Emissions during December and conservatively assumed to span one month.
Well Intervention Fugitive Dust	FRACFE	Alternative C well interventions will take place during ice road season where there is no fugitive dust.
Occupied Structure Pad - Incinerator	OPSINC	From Alternative C Emission Inventory, emissions during April through December.
Occupied Structure Pad - Emergency Generator	OPSEG	From Alternative C Emission Inventory, emissions annualized for 42 hours per month. Emissions during April through December.
Line Heater	OPSLH	From Alternative C Emission Inventory, emissions during December.
Operations Mobile Equipment Tailpipe	OPSTAIL	From Alternative C Emission Inventory, emissions scaled based on length of modeled road by the average trip distance and divided equally among each road segment. Emissions during December therefore no fugitive dust.
GMT2 Pad Emergency Generator	OPSEMGEN	From Alternative C Emission Inventory, emissions annualized for 42 hours per month. Emissions during December.

Table 3-6
ONSITE PROJECT EMISSIONS RATES AND ASSUMPTIONS FOR ALTERNATIVE C INFILL DRILLING SCENARIO

Source Description	Source ID	NOx Hourly (g/sec)	NOx Annual (g/sec)	CO Hourly (g/sec)	SO_2 Hourly (g/sec)	SO_2 Annual (g/sec)	PM_{10} Daily (g/sec)	$PM_{2.5}$ Daily (g/sec)	$PM_{2.5}$ Annual (g/sec)	HCHO (g/sec)	Toxics (g/sec)
Drill Rig - Primary Engine	DRILLPE	0.37	0.37	0.11	0.00056	0.00056	0.015	0.015	0.015	0.000026	1.00
Drill Rig - Cement Pump #1	DRILLCP1	0.019	0.0011	0.010	0.000011	0.00000061	0.00057	0.00057	0.000033	0.000088	1.00
Drill Rig - Cement Pump #2	DRILLCP2	0.019	0.0011	0.010	0.000011	0.00000061	0.00057	0.00057	0.000033	0.000088	1.00
Drill Rig - Boiler #1	DRILLB1	0.061	0.061	0.015	0.00065	0.00065	0.0073	0.0065	0.0065	0.00010	1.00
Drill Rig - Boiler #2	DRILLB2	0.061	0.061	0.015	0.00065	0.00065	0.0073	0.0065	0.0065	0.00010	1.00
Drill Rig - Air Heater #1	DRILLAH1	0.073	0.073	0.018	0.00078	0.00078	0.0087	0.0078	0.0078	0.00012	1.00
Drill Rig - Air Heater #2	DRILLAH2	0.036	0.036	0.0091	0.00039	0.00039	0.0043	0.0039	0.0039	0.000060	1.00
Drill Rig - Mud Pit Heater	DRILLMP	0.055	0.055	0.014	0.00058	0.00058	0.0065	0.0058	0.0058	0.000090	1.00
Drilling Non-Mobile Support Equipment	DRILLNR	0.14	0.14	0.079	0.00089	0.00089	0.016	0.015	0.015	0.00018	1.00
Drilling Backup Power Generator	DRILLEG	0.076	0.076	0.081	0.000061	0.000061	0.0065	0.0065	0.0065	0.000082	1.00
Drilling Mobile Equipment Tailpipe	DRILLM	0.011	0.011	0.0056	0.000032	0.000032	0.0014	0.00063	0.00063	0.00017	1.00
Drilling Fugitive Dust	DRILLFE	0	0	0	0	0	0.28	0.028	0.026	0	0
Well Intervention Coil Tubing Equipment #1	FRACENG1	0.071	0.071	0.036	0.00018	0.00018	0.0033	0.0029	0.0029	0.000025	1.00
Well Intervention Coil Tubing Equipment #2	FRACENG2	0.071	0.071	0.036	0.00018	0.00018	0.0033	0.0029	0.0029	0.000025	1.00
Well Intervention Non-Mobile Support Equipment	FRACNR	0.14	0.14	0.079	0.00089	0.00089	0.015	0.014	0.014	0.00018	1.00
Well Intervention Mobile Equipment Tailpipe	FRACM	0.023	0.023	0.0115	0.000071	0.000071	0.0029	0.0014	0.0014	0.00037	1.00

Source Description	Source ID	NOx Hourly (g/sec)	NOx Annual (g/sec)	CO Hourly (g/sec)	SO_2 Hourly (g/sec)	SO_2 Annual (g/sec)	PM_{10} Daily (g/sec)	$PM_{2.5}$ Daily (g/sec)	$PM_{2.5}$ Annual (g/sec)	HCHO (g/sec)	Toxics (g/sec)
Well Intervention Fugitive Dust	FRACFE	0	0	0	0	0	0	0	0	0	0
Line Heater	OPSLH	0.15	0.15	0.13	0.0055	0.0055	0.011	0.011	0.010	0.00011	1.00
Pigging Venting	OPSPV	0	0	0	0	0	0	0	0	0	1.00
Fugitive Components	OPSFUG	0	0	0	0	0	0	0	0	0	1.00
Occupied Structure Pad - Incinerator	OPSINC	0.062	0.062	0.032	0.00078	0.00078	0.10	0.10	0.10	0.000027	1.00
Occupied Structure Pad - Emergency Generator	OPSEG	0.056	0.055	0.056	0.00024	0.00023	0.00064	0.00064	0.00063	0.0000053	1.00
GMT2 Pad Emergency Generator	OPSEMGEN	0.10	0.10	0.057	0.00024	0.00024	0.0032	0.0032	0.0032	0.0000054	1.00
Operations Mobile Equipment Tailpipe	OPSTAIL	0.0015	0.0015	0.0016	0.0000049	0.0000049	0.00016	0.000078	0.000078	0.000033	1.00
Operations Fugitive Dust	FEROAD	0	0	0	0	0	0.22	0.022	0.021	0	0
Wind Erosion Fugitive Dust	PADFE OSPFE AAFFE FEROAD	0	0	0	0	0	1.18	0.18	0.18	0	0
Operations Aircraft Activity (<167 ft)	AIRCRAFT1	1.70E-02	1.23E-02	4.85E-01	3.82E-03	2.86E-03	3.86E-03	3.86E-03	3.02E-03	5.12E-03	0.333
Operations Aircraft Activity (167 < x < 500 ft)	AIRCRAFT2	1.70E-02	1.23E-02	4.85E-01	3.82E-03	2.86E-03	3.86E-03	3.86E-03	3.02E-03	5.12E-03	0.333
Operations Aircraft Activity (500 < x < 833 ft)	AIRCRAFT3	1.70E-02	1.23E-02	4.85E-01	3.82E-03	2.86E-03	3.86E-03	3.86E-03	3.02E-03	5.12E-03	0.333

1. 8-hour standard model run for CO was modeled using the maximum hour emission rate.
2. 3 hour and 24-hour standard model run for SO2 will be modeled using the maximum emission rate.
3. Annual emissions are based on the rolling 12-month total of Year 4.
4. Road emissions were divided equally among the series of volume sources.

Table 3-6
ONSITE PROJECT EMISSIONS RATES AND ASSUMPTIONS FOR ALTERNATIVE C INFILL DRILLING SCENARIO (cont.)

Source Description	Source ID	Assumption Notes
Drill Rig - Primary Engine	DRILLPE	From Alternative C Emission Inventory, emissions during January through December.
Drill Rig - Cement Pump #1	DRILLCP1	From Alternative C Emission Inventory, emissions annualized since only operate 500 hours per year. Emissions during January through December.
Drill Rig - Cement Pump #2	DRILLCP2	From Alternative C Emission Inventory, emissions annualized since only operate 500 hours per year. Emissions during January through December.
Drill Rig - Boiler #1	DRILLB1	From Alternative C Emission Inventory, emissions during January through December.
Drill Rig - Boiler #2	DRILLB2	From Alternative C Emission Inventory, emissions during January through December.
Drill Rig - Air Heater #1	DRILLAH1	From Alternative C Emission Inventory, emissions during January through December.
Drill Rig - Air Heater #2	DRILLAH2	From Alternative C Emission Inventory, emissions during January through December.
Drill Rig - Mud Pit Heater	DRILLMP	From Alternative C Emission Inventory, emissions during January through December.
Drilling Non-Mobile Support Equipment	DRILLNR	Based on notes from CPAI on 6/29/2017, emissions for 4 lighting engines, 1 snow melter, 1 welder/compressor engine, and 2 portable heaters included. Emissions during January through December.
Drilling Backup Power Generator	DRILLEG	From Alternative C Emission Inventory, emissions annualized since only operate 4 days per month. Emissions during January through December.
Drilling Mobile Equipment Tailpipe	DRILLM	From Alternative C Emission Inventory, emissions scaled based on length of modeled road by the average trip distance and divided equally among each road segment. Emissions during January through December.
Drilling Fugitive Dust	DRILLFE	From Alternative C Emission Inventory, emissions divided equally among each road segment. Emissions during June through September.
Well Intervention Coil Tubing Equipment #1	FRACENG1	From Alternative C Emission Inventory, only included coil tubing equipment similar to assumption made in GMT1 and divided between two Source IDs. Emissions during January through April, and December per CPAI comment on 6/29/2017 that well interventions would occur during ice road season. Emissions annualized for final report since operations will only take place 224 hours per year
Well Intervention Coil Tubing Equipment #2	FRACENG2	From Alternative C Emission Inventory, only included coil tubing equipment similar to assumption made in GMT1 and divided between two Source IDs. Emissions during January through April, and December per CPAI comment on 6/29/2017 that well interventions would occur during ice road season. Emissions annualized for final report since operations will only take place 224 hours per year

Source Description	Source ID	Assumption Notes
Well Intervention Non-Mobile Support Equipment	FRACNR	Based on notes from CPAI on 6/29/2017, emissions for 4 lighting engines, 1 snow melter, 1 welder/compressor engine, and 2 portable heaters included. Emissions during January through April, and December.
Well Intervention Mobile Equipment Tailpipe	FRACM	From Alternative C Emission Inventory, emissions scaled based on length of modeled road by the average trip distance and divided equally among each road segment. Emissions during January through April, and December and conservatively assumed to span one month.
Well Intervention Fugitive Dust	FRACFE	Alternative C well interventions will take place during ice road season where there is no fugitive dust.
Line Heater	OPSLH	From Alternative C Emission Inventory, emissions during January through December.
Pigging Venting	OPSPV	From Alternative C Emission Inventory, emissions annualized for 1 hour of operation per year. Emissions during January through December.
Fugitive Components	OPSFUG	From Alternative C Emissions Inventory, emissions during January through December.
Occupied Structure Pad - Incinerator	OPSINC	From Alternative C Emissions Inventory, emissions during January through December.
Occupied Structure Pad - Emergency Generator	OPSEG	From Alternative C Emission Inventory, emissions annualized for 42 hours per month. Emissions during January through December.
GMT2 Pad Emergency Generator	OPSEMGEN	From Alternative C Emission Inventory, emissions annualized for 42 hours per month. Emissions during January through December.
Operations Mobile Equipment Tailpipe	OPSTAIL	From Alternative C Emission Inventory, emissions scaled based on length of modeled road by the average trip distance and divided equally among each road segment. Emissions during January through December.
Operations Fugitive Dust	FEROAD	From Alternative C Emission Inventory, emissions divided equally among each road segment. Emissions during June through September.
Wind Erosion Fugitive Dust	PADFE OSPFE AAFFE FEROAD	From the Alternative C Emission Inventory, emissions were scaled based on gravel supply. Emissions during June through September.
Operations Aircraft Activity (<167 ft)	AIRCRAFT1	From Alternative C Emission Inventory, emissions divided equally between 3 heights on a runway. Emissions during January through December.
Operations Aircraft Activity (167 < x < 500 ft)	AIRCRAFT2	From Alternative C Emission Inventory, emissions divided equally between 3 heights on a runway. Emissions during January through December.
Operations Aircraft Activity (500 < x < 833 ft)	AIRCRAFT3	From Alternative C Emission Inventory, emissions divided equally between 3 heights on a runway. Emissions during January through December.

Because of the similarities between the recently approved GMT1 project and the proposed GMT2 project, the same basic equipment is being assumed for GMT2 as GMT1 in the emission inventories, but scaled as necessary using GMT2 project specific data (BLM, 2013). Likewise, some but not all of the same modeling parameters will be used for GMT2 as were for GMT1 for consistency. Details on modeling parameters are discussed in Section 4.

Onsite project impacts were evaluated to assess project–specific impacts with respect to the NAAQS and AAAQS. Offsite project impacts such as tie-in work to GMT1 and CD1, offsite power generators at Kuukpik Pad, and additional travel on ice roads whose emissions were estimated as part of the GMT2 emissions inventory were also included in the near field modeling scenarios as applicable based on the timing of their expected operation. The additional emissions at CD1, Kuukpik, and from ice roads due to the GMT2 project are directly associated with the construction and operation of GMT2 so would not be captured in existing background data. Offsite project emissions are detailed below for each modeled alternative. One table is included for Alternative A and one table for Alternative C and includes all modeling scenarios. Model parameters for offsite project sources are detailed in Section 4.

Table 3-7
OFFSITE PROJECT EMISSIONS RATES AND ASSUMPTIONS FOR ALTERNATIVE A CONSTRUCTION SCENARIO

Source Description	SourceID	NOx Hourly (g/sec)	NOx Annual (g/sec)	CO Hourly (g/sec)	SO_2 Hourly (g/sec)	SO_2 Annual (g/sec)	PM_{10} Daily (g/sec)	$PM_{2.5}$ Daily (g/sec)	$PM_{2.5}$ Annual (g/sec)	HCHO (g/sec)	Toxics (g/sec)
Seasonal Ice Road Construction	ICEROAD	0.29	0.29	0.092	0.00028	0.00028	0.013	0.012	0.012	0.0055	1.00
Aircraft Activity (<167 ft)	NUQAIR1	5.19E-03	2.34E-03	6.51E-03	1.07E-03	4.63E-04	1.27E-04	1.27E-04	8.74E-05	4.59E-05	0.333
Aircraft Activity (167 < x < 500 ft)	NUQAIR2	5.19E-03	2.34E-03	6.51E-03	1.07E-03	4.63E-04	1.27E-04	1.27E-04	8.74E-05	4.59E-05	0.333
Aircraft Activity (500 < x < 833 ft)	NUQAIR3	5.19E-03	2.34E-03	6.51E-03	1.07E-03	4.63E-04	1.27E-04	1.27E-04	8.74E-05	4.59E-05	0.333
Facilities Installation related to GMT2	CD5FACT	0.30	0.30	0.16	0.00093	0.00093	0.029	0.027	0.027	0.0079	1.00

Source Description	SourceID	Assumption Notes
Seasonal Ice Road Construction	ICEROAD	From Alternative A Emission Inventory, emissions scaled based on modeled road length and total ice road mileage. Emissions divided equally among each road segment and assume operational 12 hours per day. Maximum hourly emissions were used for annual model runs. Emissions during January February, November, and December from 7 AM to 7 PM.
Aircraft Activity (<167 ft)	NUQAIR1	From Alternative A Emission Inventory, emissions divided equally between 3 heights on a runway. Emissions during January through September, November, and December.
Aircraft Activity (167 < x < 500 ft)	NUQAIR2	From Alternative A Emission Inventory, emissions divided equally between 3 heights on a runway. Emissions during January through September, November, and December.
Aircraft Activity (500 < x < 833 ft)	NUQAIR3	From Alternative A Emission Inventory, emissions divided equally between 3 heights on a runway. Emissions during January through September, November, and December.
Facilities Installation related to GMT2	CD5FACT	From Alternative A Emission Inventory, emissions during April through August. Stack parameters based on construction engines used in Nanushuk Draft AQIA (SLR, 2017a).

Table 3-8
OFFSITE PROJECT EMISSIONS RATES AND ASSUMPTIONS FOR ALTERNATIVE A DEVELOPMENTAL DRILLING SCENARIO

Source Description	SourceID	NOx Hourly (g/sec)	NOx Annual (g/sec)	CO Hourly (g/sec)	SO_2 Hourly (g/sec)	SO_2 Annual (g/sec)	PM_{10} Daily (g/sec)	$PM_{2.5}$ Daily (g/sec)	$PM_{2.5}$ Annual (g/sec)	HCHO (g/sec)	Toxics (g/sec)
Kuukpik Pad Generator	KPGEN	0.0048	0.0048	0.042	0.000045	0.000045	0.00024	0.00024	0.00024	0.000061	1.00
Seasonal Ice Road Construction	ICEROAD	0.33	0.33	0.11	0.00033	0.00033	0.014	0.014	0.014	0.0063	1.00
Aircraft Activity (<167 ft)	NUQAIR1	4.50E-03	1.80E-03	6.18E-03	1.00E-03	4.17E-04	1.27E-04	1.27E-04	8.69E-05	4.41E-05	0.333
Aircraft Activity (167 < x < 500 ft)	NUQAIR2	4.50E-03	1.80E-03	6.18E-03	1.00E-03	4.17E-04	1.27E-04	1.27E-04	8.69E-05	4.41E-05	0.333
Aircraft Activity (500 < x < 833 ft)	NUQAIR3	4.50E-03	1.80E-03	6.18E-03	1.00E-03	4.17E-04	1.27E-04	1.27E-04	8.69E-05	4.41E-05	0.333
Pipeline, Powerline, Fiber Optic, and VSM Construction	PIPEINSTAL	0.35	0.35	0.12	0.00073	0.00073	0.021	0.021	0.021	0.0082	1.00

Source Description	SourceID	Assumption Notes
Kuukpik Pad Generator	KPGEN	From Alternative A Emission Inventory, emissions annualized since will only operate 96 hours per year. Emissions during May through December.
Seasonal Ice Road Construction	ICEROAD	From Alternative A Emission Inventory, emissions scaled based on modeled road length and total ice road mileage. Emissions divided equally among each road segment and assume operational 12 hours per day. Maximum hourly emissions were used for annual model runs. Emissions during January February, November, and December from 7 AM to 7 PM.
Aircraft Activity (<167 ft)	NUQAIR1	From Alternative A Emission Inventory, emissions divided equally between 3 heights on a runway. Emissions during January through December.
Aircraft Activity (167 < x < 500 ft)	NUQAIR2	From Alternative A Emission Inventory, emissions divided equally between 3 heights on a runway. Emissions during January through December.
Aircraft Activity (500 < x < 833 ft)	NUQAIR3	From Alternative A Emission Inventory, emissions divided equally between 3 heights on a runway. Emissions during January through December.
Pipeline, Powerline, Fiber Optic, and VSM Construction	PIPEINSTAL	From Alternative A Emissions Inventory, combined emissions from pipeline, powerline, fiber optic, and VSM construction. Emissions assumed to be along ice road so as to be conservative and divided equally among road segments. Emissions scaled from modeled road length to pipeline length. Maximum hourly emissions were used for annual model runs. Emissions during January through May.

Table 3-9
OFFSITE PROJECT EMISSIONS RATES AND ASSUMPTIONS FOR ALTERNATIVE A INFILL DRILLING SCENARIO

Source Description	SourceID	NOx Hourly (g/sec)	NOx Annual (g/sec)	CO Hourly (g/sec)	SO_2 Hourly (g/sec)	SO_2 Annual (g/sec)	PM_{10} Daily (g/sec)	$PM_{2.5}$ Daily (g/sec)	$PM_{2.5}$ Annual (g/sec)	HCHO (g/sec)	Toxics (g/sec)
Kuukpik Pad Generator	KPGEN	0.0032	0.0032	0.028	0.000030	0.000030	0.00016	0.00016	0.00016	0.000041	1.00
Aircraft Activity (<167 ft)	NUQAIR1	2.41E-03	6.31E-04	2.73E-03	5.25E-04	3.09E-04	0.00E+00	0.00E+00	0.00E+00	1.45E-05	0.333
Aircraft Activity (167 < x < 500 ft)	NUQAIR2	2.41E-03	6.31E-04	2.73E-03	5.25E-04	3.09E-04	0.00E+00	0.00E+00	0.00E+00	1.45E-05	0.333
Aircraft Activity (500 < x < 833 ft)	NUQAIR3	2.41E-03	6.31E-04	2.73E-03	5.25E-04	3.09E-04	0.00E+00	0.00E+00	0.00E+00	1.45E-05	0.333

Source Description	SourceID	Assumption Notes
Kuukpik Pad Generator	KPGEN	From Alternative A Emissions Inventory, emissions annualized since will only operate 96 hours per month. Emissions from January through December.
Aircraft Activity (<167 ft)	NUQAIR1	From Alternative A Emissions Inventory, emissions divided equally between 3 heights on a runway. Emissions during May through September.
Aircraft Activity (167 < x < 500 ft)	NUQAIR2	From Alternative A Emissions Inventory, emissions divided equally between 3 heights on a runway. Emissions during May through September.
Aircraft Activity (500 < x < 833 ft)	NUQAIR3	From Alternative A Emissions Inventory, emissions divided equally between 3 heights on a runway. Emissions during May through September.

Table 3-10
OFFSITE PROJECT EMISSIONS RATES AND ASSUMPTIONS FOR ALTERNATIVE C CONSTRUCTION SCENARIO

Source Description	SourceID	NOx Hourly (g/sec)	NOx Annual (g/sec)	CO Hourly (g/sec)	SO_2 Hourly (g/sec)	SO_2 Annual (g/sec)	PM_{10} Daily (g/sec)	$PM_{2.5}$ Daily (g/sec)	$PM_{2.5}$ Annual (g/sec)	HCHO (g/sec)	Toxics (g/sec)
Seasonal Ice Road Construction	ICEROAD	0.22	0.22	0.069	0.00021	0.00021	0.0094	0.0091	0.0091	0.0041	1.00
Aircraft Activity (<167 ft)	NUQAIR1	1.08E-03	9.02E-04	1.87E-03	1.75E-04	1.46E-04	8.46E-05	8.46E-05	7.05E-05	2.13E-05	0.333
Aircraft Activity (167 < x < 500 ft)	NUQAIR2	1.08E-03	9.02E-04	1.87E-03	1.75E-04	1.46E-04	8.46E-05	8.46E-05	7.05E-05	2.13E-05	0.333
Aircraft Activity (500 < x < 833 ft)	NUQAIR3	1.08E-03	9.02E-04	1.87E-03	1.75E-04	1.46E-04	8.46E-05	8.46E-05	7.05E-05	2.13E-05	0.333
Facilities Installation related to GMT2	CD5FACT	0.30	0.30	0.16	0.00093	0.00093	0.029	0.027	0.027	0.0079	1.00

Source Description	SourceID	Assumption Notes
Seasonal Ice Road Construction	ICEROAD	From Alternative C Emission Inventory, emissions scaled based on modeled road length and total ice road mileage. Emissions divided equally among each road segment and assume operational 12 hours per day. Maximum hourly emissions were used for annual model runs. Emissions during January February, November, and December from 7 AM to 7 PM.
Aircraft Activity (<167 ft)	NUQAIR1	From Alternative C Emission Inventory, emissions divided equally between 3 heights on a runway. Emissions during January through March.
Aircraft Activity (167 < x < 500 ft)	NUQAIR2	From Alternative C Emission Inventory, emissions divided equally between 3 heights on a runway. Emissions during January through March.
Aircraft Activity (500 < x < 833 ft)	NUQAIR3	From Alternative C Emission Inventory, emissions divided equally between 3 heights on a runway. Emissions during January through March.
Facilities Installation related to GMT2	CD5FACT	From Alternative C Emission Inventory, emissions during April through August. Stack parameters based on construction engines used in Nanushuk Draft AQIA.

Table 3-11
OFFSITE PROJECT EMISSIONS RATES AND ASSUMPTIONS FOR ALTERNATIVE C DEVELOPMENTAL DRILLING SCENARIO

Source Description	SourceID	NOx Hourly (g/sec)	NOx Annual (g/sec)	CO Hourly (g/sec)	SO_2 Hourly (g/sec)	SO_2 Annual (g/sec)	PM_{10} Daily (g/sec)	$PM_{2.5}$ Daily (g/sec)	$PM_{2.5}$ Annual (g/sec)	HCHO (g/sec)	Toxics (g/sec)
Kuukpik Pad Generator	KPGEN	0.0048	0.0048	0.042	0.000045	0.000045	0.00024	0.00024	0.00024	0.000061	1.00
Seasonal Ice Road Construction	ICEROAD	0.29	0.29	0.092	0.00028	0.00028	0.013	0.012	0.012	0.0055	1.00
Pipeline, Powerline, Fiber Optic, and VSM Construction	PIPEINSTAL	0.49	0.49	0.17	0.00095	0.00095	0.028	0.027	0.027	0.011	1.00

Source Description	SourceID	Assumption Notes
Kuukpik Pad Generator	KPGEN	From Alternative C Emission Inventory, emissions annualized since will only operate 96 hours per year. Emissions during May through December.
Seasonal Ice Road Construction	ICEROAD	From Alternative C Emission Inventory, emissions scaled based on modeled road length and total ice road mileage. Emissions divided equally among each road segment and assume operational 12 hours per day. Maximum hourly emissions were used for annual model runs. Emissions during January February, November, and December from 7 AM to 7 PM.
Pipeline, Powerline, Fiber Optic, and VSM Construction	PIPEINSTAL	From Alternative C Emissions Inventory, combined emissions from pipeline, powerline, fiber optic, and VSM construction. Emissions assumed to be along ice road so as to be conservative. Emissions scaled from modeled road length to pipeline length. Maximum hourly emissions were used for annual model runs. Emissions during January through May.

Table 3-12
OFFSITE PROJECT EMISSIONS RATES AND ASSUMPTIONS FOR ALTERNATIVE C INFILL DRILLING SCENARIO

Source Description	SourceID	NOx Hourly (g/sec)	NOx Annual (g/sec)	CO Hourly (g/sec)	SO_2 Hourly (g/sec)	SO_2 Annual (g/sec)	PM_{10} Daily (g/sec)	$PM_{2.5}$ Daily (g/sec)	$PM_{2.5}$ Annual (g/sec)	HCHO (g/sec)	Toxics (g/sec)
Kuukpik Pad Generator	KPGEN	0.0032	0.0032	0.028	0.000030	0.000030	0.00016	0.00016	0.00016	0.000041	1.00
Seasonal Ice Road Construction	ICEROAD	0.29	0.29	0.092	0.00028	0.00028	0.013	0.012	0.012	0.0055	1.00

Source Description	SourceID	Assumption Notes
Kuukpik Pad Generator	KPGEN	From Alternative C Emissions Inventory, emissions annualized since will only operate 96 hours per month. Emissions from January through December.
Seasonal Ice Road Construction	ICEROAD	From Alternative C Emission Inventory, emissions scaled based on modeled road length and total ice road mileage. Emissions divided equally among each road segment and assume operational 12 hours per day. Maximum hourly emissions were used for annual model runs. Emissions during January February, November, and December from 7 AM to 7 PM.

Emissions from onsite and off-site GMT2 project sources for each of the pollutants listed above are detailed in Appendix B. Appendix B includes Alternative A and Alternative C emission summaries for Construction Schedule 1. The letter titled "Alternative B Emissions Inventory, Greater Mooses Tooth 2 National Petroleum Reserve, Alaska" dated July 25, 2017 can be referenced for Alternative B emission summaries, as those emissions were not modeled (Kleinfelder and Ramboll Environ, 2017b). Tables summarizing these emission rates as they were modeled are above in Tables 3-1 through 3-8.

3.2 CUMULATIVE EMISSIONS

Emissions from existing and proposed development were also considered in the GMT2 near field AQIA. Emission sources within a 50 km radius of the proposed GMT2 Drill Pad were to be analyzed as part of the GMT2 AQIA. Table 3-9 lists the cumulative sources within 50 km, those included in the modeling, and their distance from the proposed GMT2 project, and Figure 2 in Appendix A shows the locations of the sources. The Mustang Pad is just outside the 50 km buffer circle under GMT2 Alternative A's layout, however is within the buffer in GMT2 Alternative C's scenarios due to the additional pads. For that reason, and to be conservative, the Mustang Pad was included as a cumulative source. The sources are existing sources unless otherwise noted.

Of the cumulative sources identified in Table 3-9, only those that were not assumed to be captured in the background monitoring data were explicitly modeled. Table 3-9 lists the cumulative sources, their distance and direction from the Nuiqsut Monitoring Station, and whether or not emissions from the source are assumed to be captured in the background monitoring data.

The proposed sources such as GMT1 Drill Pad and the Nanushuk Pads would not be included in the background monitoring data as they are not constructed yet. These sources were added to the model. Based on general proposed timelines, it was assumed that both the GMT1 and Nanushuk projects will have completed the construction phases before GMT2 construction would begin. Thus, only emissions from the routine operations and infill drilling phases from GMT1 and Nanushuk will be used in the GMT2 analysis. Emissions for GMT1 and Nanushuk were referenced from their final or most recently available draft AQIAs as there are not any existing air permits for these sources (AECOM, 2013a and SLR, 2017a).

Table 3-13
CUMULATIVE SOURCES WITHIN 50 KM OF PROPOSED GMT2 DRILL PAD

Name of Facility	Miles from GMT2 Drill Pad	Direction from GMT2 Drill Pad	Miles from Nuiqsut Monitoring Station	Direction from Nuiqsut Monitoring Station	Included in Nuiqsut Monitoring Station Data
CPAI GMT1 Drill Pad (approved)	8	North north-east	12	West north-west	No
CPAI CD1 Facility	22	North-east	8	North north-east	Yes
CPAI CD2	19	North-east	8	North north-west	Yes
CPAI CD3	25	North-east	14	North	Yes
CPAI CD4	18	North-east	5	North	Yes
CPAI CD5	15	North north-east	8	North-west	Yes
Mustang Pad	50	East-northeast	17	North-west	No
Nuiqsut Power Plant	17	East north-east	0.25	South south-east	Yes
ASRC Mine Site	21	East north-east	5	East	Yes
Nanushuk Pad (proposed)	30	North-east	14	North-east	No
Nanushuk Drill Site 2 (proposed)	27	North-east	11	North-east	No
Nanushuk Drill Site 3 (proposed)	23	North-east	7	North-east	No
Nanushuk Operations Center (proposed)	30	North-east	14	North-east	No

Gravel mining will occur at the ASRC mine, which is an existing mine. Because the mine is not specifically part of the proposed GMT2 project, impacts from the mine are being addressed as part of the cumulative sources rather than project emissions and the AQIA. Because of the proximity to the Nuiqsut Monitoring Station, emissions from the ASRC mine are assumed to be captured in the monitoring data.

Emissions from other existing sources listed in Table 3-9 such as the CPAI CD1-5 Pads and the Nuiqsut Power Plant are also assumed to be captured in the Nuiqsut monitoring data due to the proximity of each facility to the monitor.

Each cumulative source that was explicitly modeled will have the total emissions from the facility modeled as a single point source with emitting parameters based on the stack of the predominant emission source. Based on the timing of the GMT2 project, the emissions of the cumulative sources are from routine operations and infill drilling phases of each site. The modeling parameters and emission rates of the cumulative emission sources used for both Alternative A and C are detailed in Table 3-10 below.

HAPs were not modeled for cumulative sources because potential health effects from HAPs are assessed as an incremental increase due to the proposed GMT2 project, not cumulative.

Table 3-14
MODELING PARAMETERS AND EMISSIONS RATES FOR CUMULATIVE SOURCES

Source Description	Source ID	Stack Height (m)	Stack Temperature (deg K)	Stack Velocity (m/s)	Stack Diameter (m)	NO_2/NOx ratio	NOx Hourly (g/sec)	NOx Annual (g/sec)	CO Hourly (g/sec)	SO_2 Hourly (g/sec)	SO_2 Annual (g/sec)	PM_{10} Daily (g/sec)	$PM_{2.5}$ Daily (g/sec)	$PM_{2.5}$ Annual (g/sec)	Toxics (g/sec)
MUSTPAD[1]	MUSTPAD	9.14	725.0	20.0	2.000	0.30	5.35	5.35	6.21	0.27	0.27	0.20	0.20	0.20	0
CPAI GMT1[2]	GMT1	4.88	820.0	35.0	0.305	0.10	2.69	2.69	1.24	0.020	0.020	0.098	0.098	0.098	0
Nanushuk Pad[3]	NANUPAD	17.37	477.0	9.7	2.579	0.30	22.51	22.51	0	9.32	6.29	8.86	8.86	0.93	0
Nanushuk Drill Site 2[3]	NANUD2	19.35	783.0	36.3	0.300	0.10	17.24	17.24	0	0.96	0.73	7.25	7.25	0.31	0
Nanushuk Drill Site 3[3]	NANUD3	19.35	783.0	36.3	0.300	0.10	17.20	17.20	0	0.97	0.73	7.25	7.25	0.32	0
Nanushuk Operations Center[3]	NANUOC	7.92	764.0	71.2	0.406	0.10	0.66	0.66	0	0.016	0.0052	0.035	0.035	0.035	0

1. Referenced from AQ1328MSS01 Technical Analysis Report (ADEC, 2014).
2. Referenced from GMT1 Final SEIS (BLM, 2014).
3. Referenced from Nanushuk Project Air Quality Impact Analysis (SLR, 2017a).

4 NEAR FIELD MODELING METHODOLOGY

To assess near field project related impacts as well as cumulative impacts within 50 km from the proposed GMT2 Project, the USEPA regulatory air dispersion model, AERMOD, was used. The most recent version of AERMOD that is available at the time that the near field modeling analysis protocol was approved, June 22, 2017 was used for the near field analysis; AERMOD version is 16216r. For criteria pollutants except for NO_2 and PM_{10} as discussed in Section 4.3, the AERMOD results were added to an ambient background value and compared with the NAAQS/AAAQS. For HAPs, the AERMOD results were compared to non-cancer acute and chronic pollutant specific threshold levels. Chronic cancer risk for the Nuiqsut community was also calculated for those HAPs that have published cancer risk factors. The following sections outline details of how the near field modeling analysis was completed.

4.1 METEOROLOGICAL DATA

Meteorological data for the AERMOD modeling system were prepared using the AERMET meteorological processor applied to representative surface and regional upper air observations. USEPA modeling guidance recommends either five years of National Weather Service (NWS) hourly surface observations or at least one year of onsite/site-specific meteorological observations. As such, five years of available meteorological data from the Nuiqsut monitoring station were used for the near field modeling analysis. The surface data, upper air data, and AERMET processing procedures for dispersion model simulations are discussed below.

4.1.1 Surface Data

The 2011 to 2015 meteorological observation dataset collected at the CPAI Nuiqsut monitoring site was the primary source of hourly surface data for the AERMOD simulations. The Nuiqsut site shown in Figure 3 is located at the northern edge of the Nuiqsut village about 17 miles east northeast from the proposed GMT2 Drill Pad. The Nuiqsut data were collected in a physical setting geographically similar to the proposed GMT2 Drill Pad and in the absence of intervening terrain are considered to be representative of surface meteorological conditions in the GMT2 project area. The Nuiqsut surface data were also used for the dispersion modeling analysis supporting the GMT1 project approved by ADEC, however for different years.

The Nuiqsut site collects hourly horizontal wind speed, wind direction, vertical wind speed, temperature, differential temperature (between 2 meters and 10 meters in height and on an hourly basis), and solar radiation data (on an hourly basis). The wind observations are measured at about 10 m above the surface. In addition optional turbulence parameters that can be used by AERMOD are also calculated at the site. The supplemental data include the standard deviation of the vertical wind speed (sigma-w) and standard deviation of horizontal wind direction (sigma-theta). The instrumentation, quality assurance (QA), and quality control (QC) procedures meet the requirements of USEPA guidance for Prevention of Significant Deterioration (PSD) regulatory modeling (SLR, 2016c) and are performed according to an ADEC-approved Quality Assurance Project Plan (QAPP) (SLR, 2012). Fully QA/QC'd hourly Nuiqsut site data were provided by CPAI (AECOM, 2017).

Figure 4 in Appendix A shows a wind rose constructed from the CPAI Nuiqsut site surface observations. The winds at Nuiqsut show the characteristic east-northeast to west-southwest bimodal pattern commonly observed on the North Slope. The average wind speed during 2011-2015 was about 5 meters per second (m/s) and calm winds were infrequent, occurring for less than 1 percent of hours during the five-year period.

In addition to the CPAI Nuiqsut data, 2011-2015 surface observations were obtained from the Nuiqsut Airport NWS site, just south of Nuiqsut. The airport is about 1.25 km south of the Nuiqsut monitoring location. These data were used to augment the Nuiqsut monitoring data during periods when key parameters are missing. USEPA modeling guidance recommends a calendar quarter 90 percent data recovery for winds, solar radiation, and differential temperature measurements when these variables are used by AERMET to estimate the surface energy fluxes and atmospheric stability. To achieve this recovery, the option to substitute NWS observations for missing data was applied in AERMET. The Nuiqsut NWS data also supplemented the dataset with observations of precipitation, relative humidity, and cloud cover.

4.1.2 Upper Air Data

Upper air measurements are used to characterize the regional temperature structure of the atmosphere and are needed by AERMET to simulate the development of the convective boundary layer following sunrise. Both the height of the convective layer and the temperature lapse rate above the height are used by AERMOD. The most representative upper air measurements are the National Oceanic and Atmospheric Administration (NOAA) soundings from Barrow, Alaska. Barrow upper air sounding data were obtained from NOAA for 2011 to 2015 and used within AERMET.

4.1.3 AERMET Processing

The latest regulatory version of the AERMET meteorological processor at the time the modeling protocol was approved on June 22, 2017 was applied to prepare the necessary surface and upper air data for AERMOD. The current AERMET version is 16216. A five-year hourly dataset was prepared using the following procedures and options.

In addition to surface and upper observations, AERMET needed estimates for several surface parameters including the surface roughness length, Bowen ratio and albedo. These variables influence AERMET estimates for several boundary and surface layer parameters. Based on ADEC recommendations for the North Slope, Table 4-1 displays the proposed estimates for all wind sectors based on two seasons. The surface parameters were inferred from modeling files provided by ADEC for the Nuiqsut data (ADEC, 2015). The winter season is characteristic of snow cover while the summer season estimates these variables for the wet tundra of the North Slope coastal region in the absence of snow cover.

Table 4-1

ADEC RECOMMENDED NORTH SLOPE SURFACE PARAMETERS FOR AERMET

Surface Parameter	Winter Estimate[1]	Summer Estimate[2]
Albedo	0.8	0.18
Bowen Ratio	1.5	0.80
Surface Roughness Length (m)	0.004	0.02

1. Winter months are from October through May
2. Summer months are from June through September

Surface energy fluxes and stabilities were calculated by AERMET using data from the Nuiqsut site. A wind speed threshold of 0.5 m/s was used to flag calm hours. For the night-time hours, the

Bulk Richardson Method was selected using the wind speed and differential temperature observations. When available, AERMET uses the solar radiation and wind speed observations to derive the necessary variables during the day. To improve overall data recovery when key parameters from the Nuiqsut site are missing, the AERMET “SUBNWS” option was applied to substitute necessary variables from the Nuiqsut Airport NWS dataset as discussed in Section 4.1.1. The more important NWS observations include cloud cover and wind speed. The Nuiqsut site turbulence data was passed through by AERMET for use by the AERMOD dispersion estimates. Following the previous dispersion modeling analysis for GMT1, sigma-w observations less than 0.1 m/s were set to missing to avoid underestimates of vertical dispersion when winds are near the threshold of the vertical anemometer. When either sigma-theta or sigma-w are missing, AERMOD estimates these variables from other data contained in the AERMET processed input file. Lastly, based on comments from the working group the AERMET ADJU* option was not employed during the AERMET processing.

The resultant AERMOD ready output files were checked following the AERMET processing. As part of the QA/QC process calendar quarter data recovery was compared to the 90 percent target, wind roses were constructed, and variables in the files were checked against a range of expected limits.

4.2 NEAR FIELD MODELING METHODOLOGY

4.2.1 General Scenarios

As discussed in Section 3 of this report, the general emission scenarios that were modeled were Construction, Developmental Drilling, and Infill Drilling. Emissions from routine operations were modeled along with infill drilling as those operations are expected to occur during the same year (Year 4 of the GMT2 Project), therefore it is expected model results under the infill drilling scenario demonstrate a worst-case scenario for routine operations. For the Construction Modeling Scenario, emissions during the first full calendar year of the project (Year 2) were modeled to assess impacts with respect to the annual standards. For the Developmental Drilling Modeling Scenario calendar Year 3 emissions were modeled to assess impacts with respect to the annual standards. For the Infill Drilling Modeling Scenario, calendar Year 4 emissions were modeled for comparison to the annual standards. For short-term impacts, the maximum hourly emissions were estimated for both criteria pollutants and HAPs under each of the modeling scenarios. GMT2 project offsite emissions and non-project cumulative sources were included in the each of the modeling scenarios as discussed in Section 3.1, however evaluated separately from the onsite GMT2 onsite project sources. All equipment and operations contributing to the maximum emissions for each pollutant were included in the model including temporary and intermittent sources such as emergency generators and well fracturing equipment as detailed in Tables 3-1 through 3-8.

4.2.2 AERMOD Model Options

The control options in AERMOD were set to regulatory default settings, except the use of flat terrain discussed further in Section 4.2.7, to calculate pollutant concentrations. Additionally, because of the land use surrounding the proposed GMT2 project, no urban areas were selected. Pollutant average times in the model were chosen based on the form of the NAAQS/AAAQS or toxic pollutant thresholds as shown in Table 4-19 and Table 4-21. All averaging was done in AERMOD, and the correct pollutant IDs were chosen to invoke averaging for criteria pollutants. For HAPs modeling, a unitized model run was conducted for a 1-hour and annual averaging period for benzene, toluene, ethylbenzene, xylenes, and n-hexane and the AERMOD results scaled by the total actual emission rate for each HAP. This process is discussed further below. As proof that the unitized model is a conservative estimate of impacts for these HAPs, an actual emissions run was conducted for formaldehyde and compared to its unitized model result.

For modeling nitrogen dioxide (NO_2), the Ozone Limiting Method (OLM) was used for NOx to NO_2 conversion. Hourly ozone data were used from the Nuiqsut monitoring station for calendar years 2011 through 2015. Furthermore, due to the seasonal variation of pollutant background values, seasonally-varying hourly background NO_2 values were applied rather than one average background value. The procedure to calculating the seasonally-varying hourly background NO_2 values and how they were input into the model is discussed in Section 4.3.

The in-stack ratios for the OLM that were used in the 1-hour and annual NO_2 model runs for both Alternatives A and C for all scenarios are in Table 4-2 below. In the absence of any available data, the USEPA default value for in-stack ratios of 0.5 was used (USEPA, 2011). An equilibrium ratio of 0.9 was used for all sources.

Table 4-2

IN-STACK NO_2/NOx RATIOS FOR USE WITH OLM

Type of Emission Source	NO_2/NOx Ratio	Source of Data to Verify Ratio
Diesel Engines	0.1	Average rounded to the nearest tenth of data from Trident Akutan, Tok Power Generation Station, Dutch Harbor Power Plant, Dillingham Power Plant, Peter Pan Seafoods, and DU-JBER Services engines (ADEC, 2013)
Diesel fueled heaters and boiler	0.1	No data available for 10 MMBtu/hr heaters, so average data rounded up to the nearest tenth to account for any variability. Data from Dutch Harbor Plant (ADEC, 2013)
Flares	0.5	USEPA default value (USEPA, 2011)
Natural gas heaters	0.2	Average rounded to the nearest tenth from BP MPU (ADEC, 2013)
Diesel tailpipe from non-road equipment	0.2	GMT1 value (AECOM, 2013a)
Diesel tailpipe from on-road vehicles	0.15	GMT1 value (AECOM, 2013a)
Natural gas-fired turbines	0.3	In-stack ratio used for natural-gas fired turbines in Nanushuk Project AQIA (SLR, 2017a)
Cumulative Sources	Variable	Were based on the values contained in this table and the predominant source at each facility (detailed in Table 3-10 of this report)

4.2.3 Modeling Parameters for Emission Sources

As mentioned in Section 3.1, the proposed GMT2 project will be similar to the recently approved GMT1 project (AECOM, 2013a). As with the emissions, the equipment that was assumed for the GMT2 near field modeling is similar to that used for the GMT1 AQIA. Thus, the point source modeling parameters that were used in the GMT2 near field modeling are the same as that used in the approved GMT1 project unless there have been updates to equipment specifications or the equipment is different. Point source emissions include stationary combustion sources such as engines and heaters.

Fugitive and mobile sources along access roads such as construction dust or tailpipe emissions were modeled as volume source. The gravel access road and ice road were modeled as a series of volume sources to represent dust or tailpipe emissions from vehicle traffic. Nonroad tailpipe emissions or fugitive dust on any of the pads or access facilities were modeled as area sources covering all acreage for each pad. For Alternative A, the GMT2 Drill Pad is not expected to be a regular area source, therefore, the area-poly source option was used. Figure 5 shows an aerial image of the intended GMT2 Drill Pad and road alignment. This more accurately covered the whole acreage of the expected Alternative A GMT2 Drill Pad. However, as noted in Tables 4-3, 4-5, and 4-7, the emission rates noted in Tables 3-1 through 3-3 for the area-poly sources are divided by the square acreage of the pad (56,656 m^2), since the AERMOD input for emissions is required to be in grams per second per meters squared ($g/s/m^2$) for area-poly sources. The Alternative C GMT2 Drill Pad is a rectangle, therefore the area source option was used. Figure 6 shows the intended layout of the GMT2 Drill Pad, Occupied Structure Pad, and Air Access Facility under Alternative C. Aircraft emissions were modeled as area sources at varying heights to simulate take-off and landings. So as to be conservative, emissions from construction of offsite project sources such as pipelines, vertical support members (VSMs) and fiber optic cables were assumed to occur along the access road. Release heights, initial vertical dimensions, and initial horizontal dimensions were based on the equipment (i.e., truck) the volume source is representing as well as Table 3-2 from the AERMOD guidance (USEPA, 2016). The modeling parameters for all onsite project and offsite project sources are included in Tables 4-3 through 4-18. Cumulative source modeling parameters were presented in Table 3-10.

Emission rates used in the model were based on maximum hourly or average annual emissions depending on the ambient air threshold for the pollutant of interest. These rates are detailed in Tables 3-1 through 3-10 for all modeling scenarios within both Alternatives. For the Construction Scenarios for Alternative A and C, the maximum hourly emission rate was used for all annual emission rates, so as to be conservative. Emission sources were assumed to operate 24 hours per day and 7 days per week unless the potential for emissions to occur during a certain period was absent due to operating schedules or environmental conditions. Based on the schedules detailed in the emission inventories in Appendix B for Alternative A and Alternative C, sources were "turned on" in the model when there was a potential for emissions. For example, fugitive dust would not occur during the winter months, so in that case, the modeling for PM_{10} and $PM_{2.5}$ only included June through September. Appropriate adjustments to the gram per second (g/s) modeled emission rates were made to ensure that, for those sources that do not operate continuously, emissions are not over- or under-stated in the AERMOD model. The model was "turned on" and "turned off" to match the emissions scenarios as appropriate. Annual emissions for sources that do not occur year round were "annualized" to the period that the model is turned on. For example, emergency generator hours were annualized based on the number of hours they will be expected to operate during the months the source was turned on in the model. Time periods when the model was turned on and off for each modeled emission source (e.g., onsite, offsite, and cumulative) are detailed in the assumptions notes in the Tables of Section 3. Emission factor sets were created based on these assumption notes using the MONTH and MHRDOW7 factors in AERMOD. MHRDOW7 factors were only used for seasonal ice road construction as noted in Tables 4-10 and 4-18. Only 1's and 0's were used to either turn the model on or off for select months and hours. The modeling parameters and factors for onsite and offsite project sources are detailed in Tables 4-3 through 4-18 below for both Alternatives A and C for all modeling scenarios. For cumulative sources, it was assumed emissions would be year-round and therefore no factors were set for those sources. Cumulative source modeling parameters were presented in Table 3-10. Two source groups were created in the model to differentiate GMT2 Project onsite impacts, and GMT2 Project offsite impacts and cumulative impacts.

The exact UTM coordinates are not included in the subsequent tables, however Figures 7 through 12 in Appendix A show the emission source location for Alternative A Construction, Developmental Drilling, and Infill Drilling scenarios and Alternative C Construction, Developmental Drilling, and Infill Drilling scenarios.

Table 4-3
ALTERNATIVE A CONSTRUCTION SCENARIO SOURCE MODEL PARAMETERS

Source Description	Source ID	Source Type	Stack Height (m)	Stack Temperature (deg K)	Stack Velocity (m/s)	Stack Diameter (m)	Release Height (m)	Horizontal Dimension (m)	Vertical Dimension (m)
Gravel Roads and Pad Construction - Construction Heaters	GRVLHT	Point	12.2	529.0	5.7	0.940	-	-	-
Gravel Roads and Pad Construction - Nonroad Tailpipe - Pad	PADNR	Area-Poly Source[1]	-	-	-	-	3.66	-	3.38
Gravel Roads and Pad Construction - Nonroad Tailpipe - Road	GRVLNRRD	Series of Volume Sources – 30	-	-	-	-	3.66	7.30	3.38
Construction Camp Generators	CAMPGEN	Point	6.5	761.0	47.0	0.200	-	-	-
Season 1 Construction Mobile Support Tailpipe	S1CONTAIL	Series of Volume Sources – 30	-	-	-	-	3.66	7.30	3.38
Season 1 Road Fugitive Dust	FEROAD	Series of Volume Sources – 30					3.66	7.30	3.38
Construction Fugitive Emissions	PADFE	Area-Poly Source[1]	-	-	-	-	3.66	-	0.851

1. Area-Poly Source requires an AERMOD emission rate in grams per second per meters squared (g/s/m^2), therefore, the emission rate in Table 3-1 for area-poly sources is divided by the square acreage of the GMT2 Alternative A Drill Pad (56,656 meters squared [m^2]).

Table 4-4
ALTERNATIVE A CONSTRUCTION SCENARIO SOURCE FACTORS

Source Description	Source ID	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Gravel Roads and Pad Construction - Construction Heaters	GRVLHT	0	1	1	1	0	0	0	1	1	0	0	0
Gravel Roads and Pad Construction - Nonroad Tailpipe - Pad	PADNR	0	1	1	1	0	0	0	1	1	0	0	0
Gravel Roads and Pad Construction - Nonroad Tailpipe - Road	GRVLNRRD	0	1	1	1	0	0	0	1	1	0	0	0
Construction Camp Generators	CAMPGEN	1	1	1	1	1	1	1	1	1	0	1	1
Season 1 Construction Mobile Support Tailpipe	S1CONTAIL	1	1	1	1	1	1	1	1	1	0	1	1
Season 1 Road Fugitive Dust	FEROAD	0	0	0	0	0	1	1	1	1	0	0	0
Construction Fugitive Emissions	PADFE	0	0	0	0	0	1	1	1	1	0	0	0

Table 4-5
ALTERNATIVE A DEVELOPMENTAL DRILLING SCENARIO SOURCE MODEL PARAMETERS

Source Description	Source ID	Source Type	Stack Height (m)	Stack Temperature (deg K)	Stack Velocity (m/s)	Stack Diameter (m)	Release Height (m)	Horizontal Dimension (m)	Vertical Dimension (m)
GMT2 Facilities Installation - Construction Heaters	GMT2HT	Point	12.2	529.0	5.7	0.940	-	-	-
GMT2 Facilities Installation - Nonroad Tailpipe	GMT2NR	Area-Poly Source[1]	-	-	-	-	3.66	-	3.38
Construction Camp Generators	CAMPGEN	Point	6.5	761.0	47.0	0.200	-	-	-
Season 2 Construction Mobile Support Tailpipe	S2CONTAIL	Series of Volume Sources – 30	-	-	-	-	3.66	7.30	3.38
Construction Fugitive Emissions - Pad	CONFE	Area-Poly Source[1]	-	-	-	-	3.66	-	0.851
Construction Fugitive Emissions - Road	FEROAD	Series of Volume Sources – 30	-	-	-	-	3.66	7.30	3.38
Drill Rig - Primary Engine	DRILLPE	Point	13.3	614	10.5	0.400	-	-	-
Drill Rig - Cement Pump #1	DRILLCP1	Point	10.4	750	43.5	0.130	-	-	-
Drill Rig - Cement Pump #2	DRILLCP2	Point	10.4	750	43.5	0.130	-	-	-
Drill Rig - Boiler #1	DRILLB1	Point	11.9	450	11.7	0.279	-	-	-
Drill Rig - Boiler #2	DRILLB2	Point	11.9	450	11.7	0.279	-	-	-
Drill Rig - Air Heater #1	DRILLAH1	Point	10.5	533	3.2	0.300	-	-	-
Drill Rig - Air Heater #2	DRILLAH2	Point	10.5	533	3.2	0.300	-	-	-
Drill Rig - Mud Pit Heater	DRILLMP	Point	7.2	533	10.8	0.300	-	-	-
Drilling Backup Power Generator	DRILLEG	Point	6.1	795	15.1	0.460	-	-	-
Drilling Non-Mobile Support Equipment	DRILLNR	Area-Poly Source[1]	-	-	-	-	3.66	-	3.38

Source Description	Source ID	Source Type	Stack Height (m)	Stack Temperature (deg K)	Stack Velocity (m/s)	Stack Diameter (m)	Release Height (m)	Horizontal Dimension (m)	Vertical Dimension (m)
Drilling Mobile Equipment Tailpipe	DRILLM	Series of Volume Sources – 30	-	-	-	-	3.66	7.30	3.38
Drilling Fugitive Dust	FEROAD	Series of Volume Sources – 30	-	-	-	-	3.66	7.30	3.38
Drilling Well Flowback and Flaring	DRILLFLARE	Point	10.1	1,033	6.1	0.300	-	-	-
Well Intervention Coil Tubing Equipment #1	FRACENG1	Point	3.7	644	41.6	0.356	-	-	-
Well Intervention Coil Tubing Equipment #2	FRACENG2	Point	3.7	644	41.6	0.356	-	-	-
Well Intervention Non-Mobile Support Equipment	FRACNR	Area-Poly Source[1]	-	-	-	-	3.66	-	3.38
Well Intervention Mobile Equipment Tailpipe	DRILLM	Series of Volume Sources – 30	-	-	-	-	3.66	7.30	3.38
Well Intervention Fugitive Dust	FEROAD	Series of Volume Sources – 30	-	-	-	-	3.66	7.30	3.38
Line Heater	OPSLH	Point	12.2	529	5.7	0.94	-	-	-
GMT2 Pad Emergency Generator	OPSEMGEN	Point	6.1	795	15.1	0.460	-	-	-
Operations Mobile Equipment Tailpipe	OPSTAIL	Series of Volume Sources – 30	-	-	-	-	3.66	7.30	3.38

1. Area-Poly Source requires an AERMOD emission rate in grams per second per meters squared ($g/s/m^2$), therefore, the emission rate in Table 3-2 for area-poly sources is divided by the square acreage of the GMT2 Alternative A Drill Pad (56,656 meters squared [m^2]).

Table 4-6
ALTERNATIVE A DEVELOPMENTAL DRILLING SCENARIO SOURCE FACTORS

Source Description	Source ID	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
GMT2 Facilities Installation - Construction Heaters	GMT2HT	0	0	0	1	1	1	1	1	1	1	1	1
GMT2 Facilities Installation - Nonroad Tailpipe	GMT2NR	0	0	0	1	1	1	1	1	1	1	1	1
Construction Camp Generators	CAMPGEN	1	1	1	1	1	1	1	1	1	1	1	0
Season 2 Construction Mobile Support Tailpipe	S2CONTAIL	1	1	1	1	1	1	1	1	1	1	1	1
Construction Fugitive Emissions	CONFE FEROAD	0	0	0	0	0	1	1	1	1	0	0	0
Drill Rig - Primary Engine	DRILLPE	0	0	0	0	1	1	1	1	1	1	1	1
Drill Rig - Cement Pump #1	DRILLCP1	0	0	0	0	1	1	1	1	1	1	1	1
Drill Rig - Cement Pump #2	DRILLCP2	0	0	0	0	1	1	1	1	1	1	1	1
Drill Rig - Boiler #1	DRILLB1	0	0	0	0	1	1	1	1	1	1	1	1
Drill Rig - Boiler #2	DRILLB2	0	0	0	0	1	1	1	1	1	1	1	1
Drill Rig - Air Heater #1	DRILLAH1	0	0	0	0	1	1	1	1	1	1	1	1
Drill Rig - Air Heater #2	DRILLAH2	0	0	0	0	1	1	1	1	1	1	1	1
Drill Rig - Mud Pit Heater	DRILLMP	0	0	0	0	1	1	1	1	1	1	1	1
Drilling Backup Power Generator	DRILLEG	0	0	0	0	1	1	1	1	1	1	1	1
Drilling Non-Mobile Support Equipment	DRILLNR	0	0	0	0	1	1	1	1	1	1	1	1
Drilling Mobile Equipment Tailpipe	DRILLM	0	0	0	0	1	1	1	1	1	1	1	1

Source Description	Source ID	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Drilling Fugitive Dust	FEROAD	0	0	0	0	0	1	1	1	1	0	0	0
Drilling Well Flowback and Flaring	DRILLFLARE	0	0	0	0	1	1	1	1	1	1	1	1
Well Intervention Coil Tubing Equipment #1	FRACENG1	0	0	0	0	1	1	1	1	1	1	1	1
Well Intervention Coil Tubing Equipment #2	FRACENG2	0	0	0	0	1	1	1	1	1	1	1	1
Well Intervention Non-Mobile Support Equipment	FRACNR	0	0	0	0	1	1	1	1	1	1	1	1
Well Intervention Mobile Equipment Tailpipe	DRILLM	0	0	0	0	1	1	1	1	1	1	1	1
Well Intervention Fugitive Dust	FEROAD	0	0	0	0	0	1	1	1	1	0	0	0
Line Heater	OPSLH	0	0	0	0	0	0	0	0	0	0	0	1
GMT2 Pad Emergency Generator	OPSEMGEN	0	0	0	0	0	0	0	0	0	0	0	1
Operations Mobile Equipment Tailpipe	OPSTAIL	0	0	0	0	0	0	0	0	0	0	0	1

Table 4-7
ALTERNATIVE A INFILL DRILLING SCENARIO SOURCE MODEL PARAMETERS

Source Description	Source ID	Source Type	Stack Height (m)	Stack Temperature (deg K)	Stack Velocity (m/s)	Stack Diameter (m)	Release Height (m)	Horizontal Dimension (m)	Vertical Dimension (m)
Drill Rig - Primary Engine	DRILLPE	Point	13.3	614	10.5	0.400	-	-	-
Drill Rig - Cement Pump #1	DRILLCP1	Point	10.4	750	43.5	0.130	-	-	-
Drill Rig - Cement Pump #2	DRILLCP2	Point	10.4	750	43.5	0.130	-	-	-
Drill Rig - Boiler #1	DRILLB1	Point	11.9	450	11.7	0.279	-	-	-
Drill Rig - Boiler #2	DRILLB2	Point	11.9	450	11.7	0.279	-	-	-
Drill Rig - Air Heater #1	DRILLAH1	Point	10.5	533	3.2	0.300	-	-	-
Drill Rig - Air Heater #2	DRILLAH2	Point	10.5	533	3.2	0.300	-	-	-
Drill Rig - Mud Pit Heater	DRILLMP	Point	7.2	533	10.8	0.300	-	-	-
Drilling Backup Power Generator	DRILLEG	Point	6.1	795	15.1	0.460	-	-	-
Drilling Non-Mobile Support Equipment	DRILLNR	Area-Poly Source[1]	-	-	-	-	3.66	-	3.38
Drilling Mobile Equipment Tailpipe	TAIL	Series of Volume Sources – 30	-	-	-	-	3.66	7.30	3.38
Drilling Fugitive Dust	FEROAD	Series of Volume Sources – 30	-	-	-	-	3.66	7.30	3.38
Well Intervention Coil Tubing Equipment #1	FRACENG1	Point	3.7	644	41.6	0.356	-	-	-
Well Intervention Coil Tubing Equipment #2	FRACENG2	Point	3.7	644	41.6	0.356	-	-	-
Well Intervention Non-Mobile Support Equipment	FRACNR	Area-Poly Source[1]	-	-	-	-	3.66	-	3.38
Well Intervention Mobile Equipment Tailpipe	TAIL	Series of Volume Sources – 30	-	-	-	-	3.66	7.30	3.38

Source Description	Source ID	Source Type	Stack Height (m)	Stack Temperature (deg K)	Stack Velocity (m/s)	Stack Diameter (m)	Release Height (m)	Horizontal Dimension (m)	Vertical Dimension (m)
Well Intervention Fugitive Dust	FEROAD	Series of Volume Sources – 30	-	-	-	-	3.66	7.30	3.38
Line Heater	OPSLH	Point	12.2	529	5.7	0.94	-	-	-
Pigging Venting	OPSPV	Area-Poly Source[1]	-	-	-	-	3.66	-	3.38
Fugitive Components	OPSFUG	Area-Poly Source[1]	-	-	-	-	3.66	-	3.38
GMT2 Pad Emergency Generator	OPSEMGEN	Point	6.1	795	15.1	0.460	-	-	-
Operations Mobile Equipment Tailpipe	TAIL	Series of Volume Sources – 30	-	-	-	-	3.66	7.30	3.38
Operations Fugitive Dust	FEROAD	Series of Volume Sources – 30	-	-	-	-	3.66	7.30	3.370
Wind Erosion Fugitive Dust - Pad	PADFE	Area-Poly Source[1]	-	-	-	-	3.66	-	0.851
Wind Erosion Fugitive Dust - Road	FEROAD	Series of Volume Sources – 30	-	-	-	-	3.66	7.30	3.38

1. Area-Poly Source requires an AERMOD emission rate in grams per second per meters squared ($g/s/m^2$), therefore, the emission rate in Table 3-3 for area-poly sources is divided by the square acreage of the GMT2 Alternative A Drill Pad (56,656 meters squared [m^2]).

Table 4-8
ALTERNATIVE A INFILL DRILLING SCENARIO SOURCE FACTORS

Source Description	Source ID	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Drill Rig - Primary Engine	DRILLPE	1	1	1	1	1	1	1	1	1	1	1	1
Drill Rig - Cement Pump #1	DRILLCP1	1	1	1	1	1	1	1	1	1	1	1	1
Drill Rig - Cement Pump #2	DRILLCP2	1	1	1	1	1	1	1	1	1	1	1	1
Drill Rig - Boiler #1	DRILLB1	1	1	1	1	1	1	1	1	1	1	1	1
Drill Rig - Boiler #2	DRILLB2	1	1	1	1	1	1	1	1	1	1	1	1
Drill Rig - Air Heater #1	DRILLAH1	1	1	1	1	1	1	1	1	1	1	1	1
Drill Rig - Air Heater #2	DRILLAH2	1	1	1	1	1	1	1	1	1	1	1	1
Drill Rig - Mud Pit Heater	DRILLMP	1	1	1	1	1	1	1	1	1	1	1	1
Drilling Backup Power Generator	DRILLEG	1	1	1	1	1	1	1	1	1	1	1	1
Drilling Non-Mobile Support Equipment	DRILLNR	1	1	1	1	1	1	1	1	1	1	1	1
Drilling Mobile Equipment Tailpipe	TAIL	1	1	1	1	1	1	1	1	1	1	1	1
Drilling Fugitive Dust	FEROAD	0	0	0	0	0	1	1	1	1	0	0	0
Well Intervention Coil Tubing Equipment #1	FRACENG1	1	1	1	1	1	1	1	1	1	1	1	1
Well Intervention Coil Tubing Equipment #2	FRACENG2	1	1	1	1	1	1	1	1	1	1	1	1
Well Intervention Non-Mobile Support Equipment	FRACNR	1	1	1	1	1	1	1	1	1	1	1	1

Source Description	Source ID	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Well Intervention Mobile Equipment Tailpipe	TAIL	1	1	1	1	1	1	1	1	1	1	1	1
Well Intervention Fugitive Dust	FEROAD	0	0	0	0	0	1	1	1	1	0	0	0
Line Heater	OPSLH	1	1	1	1	1	1	1	1	1	1	1	1
Pigging Venting	OPSPV	1	1	1	1	1	1	1	1	1	1	1	1
Fugitive Components	OPSFUG	1	1	1	1	1	1	1	1	1	1	1	1
GMT2 Pad Emergency Generator	OPSEMGEN	1	1	1	1	1	1	1	1	1	1	1	1
Operations Mobile Equipment Tailpipe	TAIL	1	1	1	1	1	1	1	1	1	1	1	1
Operations Fugitive Dust	FEROAD	0	0	0	0	0	1	1	1	1	0	0	0
Wind Erosion Fugitive Dust	PADFE FEROAD	0	0	0	0	0	1	1	1	1	0	0	0

Table 4-9
ALTERNATIVE A OFFSITE PROJECT SOURCE MODEL PARAMETERS

Source Description	SourceID	Source Type	Stack Height (m)	Stack Temperature (deg K)	Stack Velocity (m/s)	Stack Diameter (m)	Release Height (m)	Horizontal Dimension (m)	Vertical Dimension (m)
Seasonal Ice Road Construction	ICEROAD	Series of Volume Sources – 30	-	-	-	-	3.66	7.30	3.38
Aircraft Activity (<167 ft)	NUQAIR1	Area Source[1]	-	-	-	-	50.80	-	77.50
Aircraft Activity (167 < x < 500 ft)	NUQAIR2	Area Source[1]	-	-	-	-	152.40	-	77.50
Aircraft Activity (500 < x < 833 ft)	NUQAIR3	Area Source[1]	-	-	-	-	254.00	-	77.50
Facilities Installation related to GMT2	CD5FACT	Point	7.92	845	57.78	0.203	-	-	-
Kuukpik Pad Generator	KPGEN	Point	6.5	761.0	47.0	0.200	-	-	-
Seasonal Ice Road Construction	ICEROAD	Series of Volume Sources – 30	-	-	-	-	3.66	7.30	3.38
Aircraft Activity (<167 ft)	NUQAIR1	Area Source[1]	-	-	-	-	50.80	-	77.50
Aircraft Activity (167 < x < 500 ft)	NUQAIR2	Area Source[1]	-	-	-	-	152.40	-	77.50
Aircraft Activity (500 < x < 833 ft)	NUQAIR3	Area Source[1]	-	-	-	-	254.00	-	77.50
Pipeline, Powerline, VSM, and Fiber Optic Construction	PIPEINSTALL	Series of Volume Sources – 30	-	-	-	-	3.66	7.30	3.38
Kuukpik Pad Generator	KPGEN	Point	6.5	761.0	47.0	0.200	-	-	-
Aircraft Activity (<167 ft)	NUQAIR1	Area Source[1]	-	-	-	-	50.80	-	77.50
Aircraft Activity (167 < x < 500 ft)	NUQAIR2	Area Source[1]	-	-	-	-	152.40	-	77.50
Aircraft Activity (500 < x < 833 ft)	NUQAIR3	Area Source[1]	-	-	-	-	254.00	-	77.50

1. AERMOD calculates the emission rate from Table 3-7 to grams per second per meters squared (g/s/m^2), based on its calculation of the source dimensions.

Table 4-10
ALTERNATIVE A OFFSITE PROJECT SOURCE FACTORS

Source Description	SourceID	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Seasonal Ice Road Construction[1]	ICEROAD	1	1	0	0	0	0	0	0	0	0	1	1
Aircraft Activity (<167 ft)	NUQAIR1	1	1	1	1	1	1	1	1	1	0	1	1
Aircraft Activity (167 < x < 500 ft)	NUQAIR2	1	1	1	1	1	1	1	1	1	0	1	1
Aircraft Activity (500 < x < 833 ft)	NUQAIR3	1	1	1	1	1	1	1	1	1	0	1	1
Facilities Installation related to GMT2	CD5FACT	0	0	0	1	1	1	1	1	0	0	0	0
Kuukpik Pad Generator	KPGEN	0	0	0	0	1	1	1	1	1	1	1	1
Seasonal Ice Road Construction[1]	ICEROAD	1	1	0	0	0	0	0	0	0	0	1	1
Aircraft Activity (<167 ft)	NUQAIR1	1	1	1	1	1	1	1	1	1	1	1	1
Aircraft Activity (167 < x < 500 ft)	NUQAIR2	1	1	1	1	1	1	1	1	1	1	1	1
Aircraft Activity (500 < x < 833 ft)	NUQAIR3	1	1	1	1	1	1	1	1	1	1	1	1
Pipeline, Powerline, VSM, and Fiber Optic Construction	PIPEINSTAL	1	1	1	1	1	0	0	0	0	0	0	0
Kuukpik Pad Generator	KPGEN	1	1	1	1	1	1	1	1	1	1	1	1
Aircraft Activity (<167 ft)	NUQAIR1	0	0	0	0	1	1	1	1	1	1	1	1
Aircraft Activity (167 < x < 500 ft)	NUQAIR2	0	0	0	0	1	1	1	1	1	1	1	1
Aircraft Activity (500 < x < 833 ft)	NUQAIR3	0	0	0	0	1	1	1	1	1	1	1	1

1. Seasonal Ice Road Construction used the MHRDOW7 scaling factor for the months indicated above from hours 7 through 18.

Table 4-11
ALTERNATIVE C CONSTRUCTION SCENARIO SOURCE MODEL PARAMETERS

Source Description	Source ID	Source Type	Stack Height (m)	Stack Temperature (deg K)	Stack Velocity (m/s)	Stack Diameter (m)	Release Height (m)	Horizontal Dimension (m)	Vertical Dimension (m)
Gravel Roads and Pad Construction - Construction Heaters	GRVLHT	Point	12.2	529.0	5.7	0.940	-	-	-
Gravel Roads and Pad Construction - Nonroad Tailpipe - Pad	PADNR	Area Source[1]	-	-	-	-	3.66	-	3.38
Gravel Roads and Pad Construction - Nonroad Tailpipe - Road	GRVLNRRD	Series of Volume Sources – 8	-	-	-	-	3.66	7.30	3.38
Gravel Roads and Pad Construction - Nonroad Tailpipe - Occupied Structure Pad	OSPNR	Area Source[1]	-	-	-	-	3.66	-	3.38
Gravel Roads and Pad Construction - Nonroad Tailpipe - Air Access Facility	AAFNR	Area Source[1]	-	-	-	-	3.66	-	3.38
Season 1 Aircraft Activity (<167 ft)	AIRCRAFT1	Area Source[1]	-	-	-	-	50.80	-	77.50
Season 1 Aircraft Activity (167 < x < 500 ft)	AIRCRAFT2	Area Source[1]	-	-	-	-	152.40	-	77.50
Season 1 Aircraft Activity (500 < x < 833 ft)	AIRCRAFT3	Area Source[1]	-	-	-	-	254.00	-	77.50
Construction Camp Generators	CAMPGEN	Point	6.5	761.0	47.0	0.200	-	-	-
Season 1 Construction Mobile Support Tailpipe	S1CONTAIL	Series of Volume Sources	-	-	-	-	3.66	7.30	3.38
Construction Fugitive Emissions	PADFE OSPFE AAFFE FEROAD	Area Sources[1], and Series of Volume Sources – 8	-	-	-	-	3.66	-	0.851

1. AERMOD calculates the emission rate from Table 3-4 to grams per second per meters squared (g/s/m^2), based on its calculation of the source dimensions.

Table 4-12
ALTERNATIVE C CONSTRUCTION SCENARIO SOURCE FACTORS

Source Description	Source ID	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Gravel Roads and Pad Construction - Construction Heaters	GRVLHT	0	1	1	1	0	0	0	1	1	0	0	0
Gravel Roads and Pad Construction - Nonroad Tailpipe - Pad	PADNR	0	1	1	1	0	0	0	1	1	0	0	0
Gravel Roads and Pad Construction - Nonroad Tailpipe - Road	GRVLNRRD	0	1	1	1	0	0	0	1	1	0	0	0
Gravel Roads and Pad Construction - Nonroad Tailpipe - Occupied Structure Pad	OSPNR	0	1	1	1	0	0	0	1	1	0	0	0
Gravel Roads and Pad Construction - Nonroad Tailpipe - Air Access Facility	AAFNR	0	1	1	1	0	0	0	1	1	0	0	0
Season 1 Aircraft Activity (<167 ft)	AIRCRAFT1	0	0	0	1	1	1	1	1	1	0	1	1
Season 1 Aircraft Activity (167 < x < 500 ft)	AIRCRAFT2	0	0	0	1	1	1	1	1	1	0	1	1
Season 1 Aircraft Activity (500 < x < 833 ft)	AIRCRAFT3	0	0	0	1	1	1	1	1	1	0	1	1
Construction Camp Generators	CAMPGEN	1	1	1	1	1	1	1	1	1	0	1	1
Season 1 Construction Mobile Support Tailpipe	S1CONTAIL	1	1	1	1	1	1	1	1	1	0	1	1
Construction Fugitive Emissions	PADFE OSPFE AAFFE FEROAD	0	0	0	0	0	1	1	1	1	0	0	0

Table 4-13
ALTERNATIVE C DEVELOPMENTAL DRILLING SCENARIO SOURCE MODEL PARAMETERS

Source Description	Source ID	Source Type	Stack Height (m)	Stack Temperature (deg K)	Stack Velocity (m/s)	Stack Diameter (m)	Release Height (m)	Horizontal Dimension (m)	Vertical Dimension (m)
GMT2 Facilities Installation - Construction Heaters	GMT2HT	Point	12.2	529.0	5.7	0.940	-	-	-
GMT2 Facilities Installation - Nonroad Tailpipe	GMT2NR1&2	Area Source[1]	-	-	-	-	3.66	-	3.38
Construction Camp Generators	CAMPGEN	Point	6.5	761.0	47.0	0.200	-	-	-
Season 2 Aircraft Activity (<167 ft)	AIRCRAFT1	Area Source[1]	-	-	-	-	50.80	-	77.50
Season 2 Aircraft Activity (167 < x < 500 ft)	AIRCRAFT2	Area Source[1]	-	-	-	-	152.40	-	77.50
Season 2 Aircraft Activity (500 < x < 833 ft)	AIRCRAFT3	Area Source[1]	-	-	-	-	254.00	-	77.50
Season 2 Construction Mobile Support Tailpipe	S2CONTAIL	Series of Volume Sources - 8	-	-	-	-	3.66	7.30	3.38
Fugitive Dust Emissions - Pads	PADFE OSPFE AAFFE	Area Source[1]	-	-	-	-	3.66	-	0.851
Fugitive Dust Emissions - Road	FEROAD	Series of Volume Sources - 8	-	-	-	-	3.66	7.30	3.38
Drill Rig - Primary Engine	DRILLPE	Point	13.3	614	10.5	0.400	-	-	-
Drill Rig - Cement Pump #1	DRILLCP1	Point	10.4	750	43.5	0.130	-	-	-
Drill Rig - Cement Pump #2	DRILLCP2	Point	10.4	750	43.5	0.130	-	-	-
Drill Rig - Boiler #1	DRILLB1	Point	11.9	450	11.7	0.279	-	-	-
Drill Rig - Boiler #2	DRILLB2	Point	11.9	450	11.7	0.279	-	-	-
Drill Rig - Air Heater #1	DRILLAH1	Point	10.5	533	3.2	0.300	-	-	-
Drill Rig - Air Heater #2	DRILLAH2	Point	10.5	533	3.2	0.300	-	-	-

Source Description	Source ID	Source Type	Stack Height (m)	Stack Temperature (deg K)	Stack Velocity (m/s)	Stack Diameter (m)	Release Height (m)	Horizontal Dimension (m)	Vertical Dimension (m)
Drill Rig - Mud Pit Heater	DRILLMP	Point	7.2	533	10.8	0.300	-	-	-
Drilling Backup Power Generator	DRILLEG	Point	6.1	795	15.1	0.460	-	-	-
Drilling Non-Mobile Support Equipment	DRILLNR	Area Source[1]	-	-	-	-	3.66	-	3.38
Drilling Mobile Equipment Tailpipe	DRILLM	Series of Volume Sources – 8	-	-	-	-	3.66	7.30	3.38
Drilling Fugitive Dust	DRILLFE	Series of Volume Sources – 8	-	-	-	-	3.66	7.30	3.38
Drilling Well Flowback and Flaring	DRILLFLARE	Point	10.1	1,033	6.1	0.300	-	-	-
Well Intervention Coil Tubing Equipment #1	FRACENG1	Point	3.7	644	41.6	0.356	-	-	-
Well Intervention Coil Tubing Equipment #2	FRACENG2	Point	3.7	644	41.6	0.356	-	-	-
Well Intervention Non-Mobile Support Equipment	FRACNR	Area Source[1]	-	-	-	-	3.66	-	3.38
Well Intervention Mobile Equipment Tailpipe	FRACM	Series of Volume Sources – 8	-	-	-	-	3.66	7.30	3.38
Well Intervention Fugitive Dust	FRACFE	Series of Volume Sources – 8	-	-	-	-	3.66	7.30	3.38
Occupied Structure Pad - Incinerator	OPSINC	Point	13.1	1,172	16.9	0.300	-	-	-
Occupied Structure Pad - Emergency Generator	OPSEG	Point	6.1	795	15.1	0.460	-	-	-
Line Heater	OPSLH	Point	12.2	529	5.7	0.940	-	-	-
Operations Mobile Equipment Tailpipe	OPSTAIL	Series of Volume Sources – 8	-	-	-	-	3.66	7.30	3.38
GMT2 Pad Emergency Generator	OPSEMGEN	Point	6.1	795	15.1	0.460	-	-	-

1. AERMOD calculates the emission rate from Table 3-5 to grams per second per meters squared ($g/s/m^2$), based on its calculation of the source dimensions.

Table 4-14
ALTERNATIVE C DEVELOPMENTAL DRILLING SCENARIO SOURCE FACTORS

Source Description	Source ID	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
GMT2 Facilities Installation - Construction Heaters	GMT2HT	0	0	0	1	1	1	1	1	1	1	1	1
GMT2 Facilities Installation - Nonroad Tailpipe	GMT2NR1&2	0	0	0	1	1	1	1	1	1	1	1	1
Construction Camp Generators	CAMPGEN	1	1	1	1	1	1	1	1	1	1	1	0
Season 2 Aircraft Activity (<167 ft)	AIRCRAFT1	1	1	1	1	1	1	1	1	1	1	1	1
Season 2 Aircraft Activity (167 < x < 500 ft)	AIRCRAFT2	1	1	1	1	1	1	1	1	1	1	1	1
Season 2 Aircraft Activity (500 < x < 833 ft)	AIRCRAFT3	1	1	1	1	1	1	1	1	1	1	1	1
Season 2 Construction Mobile Support Tailpipe	S2CONTAIL	1	1	1	1	1	1	1	1	1	1	1	1
Fugitive Dust Emissions	PADFE OSPFE AAFFE FEROAD	0	0	0	0	0	1	1	1	1	0	0	0
Drill Rig - Primary Engine	DRILLPE	0	0	0	0	1	1	1	1	1	1	1	1
Drill Rig - Cement Pump #1	DRILLCP1	0	0	0	0	1	1	1	1	1	1	1	1
Drill Rig - Cement Pump #2	DRILLCP2	0	0	0	0	1	1	1	1	1	1	1	1
Drill Rig - Boiler #1	DRILLB1	0	0	0	0	1	1	1	1	1	1	1	1
Drill Rig - Boiler #2	DRILLB2	0	0	0	0	1	1	1	1	1	1	1	1
Drill Rig - Air Heater #1	DRILLAH1	0	0	0	0	1	1	1	1	1	1	1	1
Drill Rig - Air Heater #2	DRILLAH2	0	0	0	0	1	1	1	1	1	1	1	1
Drill Rig - Mud Pit Heater	DRILLMP	0	0	0	0	1	1	1	1	1	1	1	1

Source Description	Source ID	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Drilling Backup Power Generator	DRILLEG	0	0	0	0	1	1	1	1	1	1	1	1
Drilling Non-Mobile Support Equipment	DRILLNR	0	0	0	0	1	1	1	1	1	1	1	1
Drilling Mobile Equipment Tailpipe	DRILLM	0	0	0	0	1	1	1	1	1	1	1	1
Drilling Fugitive Dust	DRILLFE	0	0	0	0	0	1	1	1	1	0	0	0
Drilling Well Flowback and Flaring	DRILLFLARE	0	0	0	0	1	1	1	1	1	1	1	1
Well Intervention Coil Tubing Equipment #1	FRACENG1	0	0	0	0	0	0	0	0	0	0	0	1
Well Intervention Coil Tubing Equipment #2	FRACENG2	0	0	0	0	0	0	0	0	0	0	0	1
Well Intervention Non-Mobile Support Equipment	FRACNR	0	0	0	0	0	0	0	0	0	0	0	1
Well Intervention Mobile Equipment Tailpipe	FRACM	0	0	0	0	0	0	0	0	0	0	0	1
Well Intervention Fugitive Dust	FRACFE	0	0	0	0	0	0	0	0	0	0	0	0
Occupied Structure Pad - Incinerator	OPSINC	0	0	0	0	0	0	0	0	0	0	0	1
Occupied Structure Pad - Emergency Generator	OPSEG	0	0	0	0	0	0	0	0	0	0	0	1
Line Heater	OPSLH	0	0	0	0	0	0	0	0	0	0	0	1
Operations Mobile Equipment Tailpipe	OPSTAIL	0	0	0	0	0	0	0	0	0	0	0	1
GMT2 Pad Emergency Generator	OPSEMGEN	0	0	0	0	0	0	0	0	0	0	0	1

Table 4-15
ALTERNATIVE C INFILL DRILLING SCENARIO SOURCE MODEL PARAMETERS

Source Description	Source ID	Source Type	Stack Height (m)	Stack Temperature (deg K)	Stack Velocity (m/s)	Stack Diameter (m)	Release Height (m)	Horizontal Dimension (m)	Vertical Dimension (m)
Drill Rig - Primary Engine	DRILLPE	Point	13.3	614	10.5	0.400	-	-	-
Drill Rig - Cement Pump #1	DRILLCP1	Point	10.4	750	43.5	0.130	-	-	-
Drill Rig - Cement Pump #2	DRILLCP2	Point	10.4	750	43.5	0.130	-	-	-
Drill Rig - Boiler #1	DRILLB1	Point	11.9	450	11.7	0.279	-	-	-
Drill Rig - Boiler #2	DRILLB2	Point	11.9	450	11.7	0.279	-	-	-
Drill Rig - Air Heater #1	DRILLAH1	Point	10.5	533	3.2	0.300	-	-	-
Drill Rig - Air Heater #2	DRILLAH2	Point	10.5	533	3.2	0.300	-	-	-
Drill Rig - Mud Pit Heater	DRILLMP	Point	7.2	533	10.8	0.300	-	-	-
Drilling Backup Power Generator	DRILLEG	Point	6.1	795	15.1	0.460	-	-	-
Drilling Non-Mobile Support Equipment	DRILLNR	Area Source[1]	-	-	-	-	3.66	-	3.38
Drilling Mobile Equipment Tailpipe	DRILLM	Series of Volume Sources – 8	-	-	-	-	3.66	7.30	3.38
Drilling Fugitive Dust	DRILLFE	Series of Volume Sources – 8	-	-	-	-	3.66	7.30	3.38
Drilling Well Flowback and Flaring	DRILLFLARE	Point	10.1	1,033	6.1	0.300	-	-	-
Well Intervention Coil Tubing Equipment #1	FRACENG1	Point	3.7	644	41.6	0.356	-	-	-
Well Intervention Coil Tubing Equipment #2	FRACENG2	Point	3.7	644	41.6	0.356	-	-	-
Well Intervention Non-Mobile Support Equipment	FRACNR	Area Source[1]	-	-	-	-	3.66	-	3.38
Well Intervention Mobile Equipment Tailpipe	FRACM	Series of Volume Sources – 8	-	-	-	-	3.66	7.30	3.38

Source Description	Source ID	Source Type	Stack Height (m)	Stack Temperature (deg K)	Stack Velocity (m/s)	Stack Diameter (m)	Release Height (m)	Horizontal Dimension (m)	Vertical Dimension (m)
Well Intervention Fugitive Dust	FRACFE	Series of Volume Sources – 8	-	-	-	-	3.66	7.30	3.38
Line Heater	OPSLH	Point	12.2	529	5.7	0.940	-	-	-
Pigging Venting	OPSPV	Area Source[1]	-	-	-	-	3.66	-	3.38
Fugitive Components	OPSFUG	Area Source[1]	-	-	-	-	3.66	-	3.38
Occupied Structure Pad - Incinerator	OPSINC	Point	13.1	1,172	16.9	0.300	-	-	-
Occupied Structure Pad - Emergency Generator	OPSEG	Point	6.1	795	15.1	0.460	-	-	-
GMT2 Pad Emergency Generator	OPSEMGEN	Point	6.1	795	15.1	0.460	-	-	-
Operations Mobile Equipment Tailpipe	OPSTAIL	Series of Volume Sources – 8	-	-	-	-	3.66	7.30	3.38
Operations Fugitive Dust	FEROAD	Series of Volume Sources – 8	-	-	-	-	3.66	7.30	3.38
Wind Erosion Fugitive Dust - Pads	PADFE OSPFE AAFFE	Area Sources[1]	-	-	-	-	3.66	-	0.851
Wind Erosion Fugitive Dust - Rad	FEROAD	Series of Volume Sources – 8	-	-	-	-	3.66	7.30	3.38
Operations Aircraft Activity (<167 ft)	AIRCRAFT1	Area Source[1]	-	-	-	-	50.80	-	77.50
Operations Aircraft Activity (167 < x < 500 ft)	AIRCRAFT2	Area Source[1]	-	-	-	-	152.40	-	77.50
Operations Aircraft Activity (500 < x < 833 ft)	AIRCRAFT3	Area Source[1]	-	-	-	-	254.00	-	77.50

1. AERMOD calculates the emission rate from Table 3-6 to grams per second per meters squared (g/s/m^2), based on its calculation of the source dimensions.

Table 4-16
ALTERNATIVE C INFILL DRILLING SCENARIO SOURCE FACTORS

Source Description	Source ID	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Drill Rig - Primary Engine	DRILLPE	1	1	1	1	1	1	1	1	1	1	1	1
Drill Rig - Cement Pump #1	DRILLCP1	1	1	1	1	1	1	1	1	1	1	1	1
Drill Rig - Cement Pump #2	DRILLCP2	1	1	1	1	1	1	1	1	1	1	1	1
Drill Rig - Boiler #1	DRILLB1	1	1	1	1	1	1	1	1	1	1	1	1
Drill Rig - Boiler #2	DRILLB2	1	1	1	1	1	1	1	1	1	1	1	1
Drill Rig - Air Heater #1	DRILLAH1	1	1	1	1	1	1	1	1	1	1	1	1
Drill Rig - Air Heater #2	DRILLAH2	1	1	1	1	1	1	1	1	1	1	1	1
Drill Rig - Mud Pit Heater	DRILLMP	1	1	1	1	1	1	1	1	1	1	1	1
Drilling Backup Power Generator	DRILLEG	1	1	1	1	1	1	1	1	1	1	1	1
Drilling Non-Mobile Support Equipment	DRILLNR	1	1	1	1	1	1	1	1	1	1	1	1
Drilling Mobile Equipment Tailpipe	DRILLM	1	1	1	1	1	1	1	1	1	1	1	1
Drilling Fugitive Dust	DRILLFE	0	0	0	0	0	1	1	1	1	0	0	0
Well Intervention Coil Tubing Equipment #1	FRACENG1	1	1	1	1	0	0	0	0	0	0	0	1
Well Intervention Coil Tubing Equipment #2	FRACENG2	1	1	1	1	0	0	0	0	0	0	0	1
Well Intervention Non-Mobile Support Equipment	FRACNR	1	1	1	1	0	0	0	0	0	0	0	1
Well Intervention Mobile Equipment Tailpipe	FRACM	1	1	1	1	0	0	0	0	0	0	0	1
Well Intervention Fugitive Dust	FRACFE	0	0	0	0	0	0	0	0	0	0	0	0
Line Heater	OPSLH	1	1	1	1	1	1	1	1	1	1	1	1

Source Description	Source ID	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Pigging Venting	OPSPV	1	1	1	1	1	1	1	1	1	1	1	1
Fugitive Components	OPSFUG	1	1	1	1	1	1	1	1	1	1	1	1
Occupied Structure Pad - Incinerator	OPSINC	1	1	1	1	1	1	1	1	1	1	1	1
Occupied Structure Pad - Emergency Generator	OPSEG	1	1	1	1	1	1	1	1	1	1	1	1
GMT2 Pad Emergency Generator	OPSEMGEN	1	1	1	1	1	1	1	1	1	1	1	1
Operations Mobile Equipment Tailpipe	OPSTAIL	1	1	1	1	1	1	1	1	1	1	1	1
Operations Fugitive Dust	FEROAD	0	0	0	0	0	1	1	1	1	0	0	0
Wind Erosion Fugitive Dust	PADFE OSPFE AAFFE FEROAD	0	0	0	0	0	1	1	1	1	0	0	0
Operations Aircraft Activity (<167 ft)	AIRCRAFT1	1	1	1	1	1	1	1	1	1	1	1	1
Operations Aircraft Activity (167 < x < 500 ft)	AIRCRAFT2	1	1	1	1	1	1	1	1	1	1	1	1
Operations Aircraft Activity (500 < x < 833 ft)	AIRCRAFT3	1	1	1	1	1	1	1	1	1	1	1	1

Table 4-17
ALTERNATIVE C OFFSITE PROJECT SOURCE MODEL PARAMETERS

Source Description	Source ID	Source Type	Stack Height (m)	Stack Temperature (deg K)	Stack Velocity (m/s)	Stack Diameter (m)	Release Height (m)	Horizontal Dimension (m)	Vertical Dimension (m)
Seasonal Ice Road Construction	ICEROAD	Series of Volume Sources – 30	-	-	-	-	3.66	7.30	3.38
Aircraft Activity (<167 ft)	NUQAIR1	Area Source[1]	-	-	-	-	50.80	-	77.50
Aircraft Activity (167 < x < 500 ft)	NUQAIR2	Area Source[1]	-	-	-	-	152.40	-	77.50
Aircraft Activity (500 < x < 833 ft)	NUQAIR3	Area Source[1]	-	-	-	-	254.00	-	77.50
Facilities Installation related to GMT2	CD5FACT	Point	7.92	845	57.78	0.203	-	-	-
Kuukpik Pad Generator	KPGEN	Point	6.5	761.0	47.0	0.200	-	-	-
Seasonal Ice Road Construction	ICEROAD	Series of Volume Sources – 30	-	-	-	-	3.66	7.30	3.38
Pipeline, Powerline, VSM, and Fiber Optic Construction	PIPEINSTALL	Series of Volume Sources – 30	-	-	-	-	3.66	7.30	3.38
Kuukpik Pad Generator	KPGEN	Point	6.5	761.0	47.0	0.200	-	-	-
Seasonal Ice Road Construction	ICEROAD	Series of Volume Sources – 30	-	-	-	-	3.66	7.30	3.38

1. AERMOD calculates the emission rate from Table 3-8 to grams per second per meters squared (g/s/m^2), based on its calculation of the source dimensions.

Table 4-18
ALTERNATIVE C OFFSITE PROJECT SOURCE FACTORS

Source Description	SourceID	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Seasonal Ice Road Construction[1]	ICEROAD	1	1	0	0	0	0	0	0	0	0	1	1
Aircraft Activity (<167 ft)	NUQAIR1	1	1	1	0	0	0	0	0	0	0	0	0
Aircraft Activity (167 < x < 500 ft)	NUQAIR2	1	1	1	0	0	0	0	0	0	0	0	0
Aircraft Activity (500 < x < 833 ft)	NUQAIR3	1	1	1	0	0	0	0	0	0	0	0	0
Facilities Installation related to GMT2	CD5FACT	0	0	0	1	1	1	1	1	0	0	0	0
Kuukpik Pad Generator	KPGEN	0	0	0	0	1	1	1	1	1	1	1	1
Seasonal Ice Road Construction[1]	ICEROAD	1	1	0	0	0	0	0	0	0	0	1	1
Pipeline, Powerline, VSM, and Fiber Optic Construction	PIPEINSTALL	1	1	1	1	1	0	0	0	0	0	0	0
Kuukpik Pad Generator	KPGEN	1	1	1	1	1	1	1	1	1	1	1	1
Seasonal Ice Road Construction[1]	ICEROAD	1	1	0	0	0	0	0	0	0	0	1	1

1. Seasonal Ice Road Construction used the MHRDOW7 scaling factor for the months indicated above from hours 7 through 18.

4.2.4 Criteria Pollutants

As shown in Tables 3-1 through 3-6 and in Appendix B, project specific emissions of CO, NOx, SO_2, PM_{10}, and $PM_{2.5}$ were calculated for the modeled GMT2 Alternatives: Alternatives A and C. The relevant air quality standards are shown in Table 4-19 along with average times. Each pollutant and average time were modeled in the near field modeling. To calculate the total impact, the AERMOD result was added to the background ambient air value, listed in Table 4-19, for all pollutants with a background value except for NO_2 and PM_{10} since the background values for those pollutants were included in the AERMOD. The total impact was then compared to the more stringent of the NAAQS or AAAQS and the results are detailed in Section 5 of this report. Table 4-19 shows the form of the standard.

Ozone also has a federal and state air quality standard, but was not modeled for the GMT2 near-field analysis due to complex chemistry and regional effects greater than 50 km. Ozone impacts are discussed qualitatively in Section 5. Additionally, secondary $PM_{2.5}$ is not considered due to its complex chemistry which is not available in AERMOD. Secondary $PM_{2.5}$ is discussed qualitatively in Section 5. Due to low emissions, lead was also not modeled though both a federal and state air quality standard exist. Except for the production line heater, which is fueled by field natural gas, all combustion sources are diesel fueled and diesel exhaust contain only trace amounts of lead, if any at all. Additionally, AP-42 does not have published emission factors for lead from diesel engines or heaters. Lastly, ammonia, which has a state air quality standard, was not modeled as the proposed GMT2 equipment and operations are not expected to produce ammonia emissions. These four pollutants are all discussed qualitatively in Section 5.

Table 4-19

NAAQS AND AAAQS VALUES

Pollutant	Average Time	NAAQS[1]	AAAQS[2]	Form of the Standard
CO	1-hour	35 ppm (40,000 μg/m^3)	40 mg/m^3 (40,000 μg/m^3)	Not to be exceeded more than once per year
CO	8-hour	9 ppm (10,000 μg/m^3)	10 mg/m^3 (10,000 μg/m^3)	Not to be exceeded more than once per year
NO_2	1-hour	100 ppb (188 μg/m^3)	188 μg/m^3	98th percentile of the daily maximum 1 hour averaged over three years
NO_2	Annual	53 ppb (100 μg/m^3)	100 μg/m^3	Annual mean
SO_2	1-hour	75 ppb (196 μg/m^3)	196 μg/m^3	99th percentile of the daily maximum 1 hour averaged over three years
SO_2	3-hour	0.5 ppm (1,300 μg/m^3)	1,300 μg/m^3	Not to be exceeded more than once per year
SO_2	24-hour	NA	365 μg/m^3	Not to be exceeded more than once per year
SO_2	Annual	NA	80 μg/m^3	Annual mean
PM_{10}	24-hour	150 μg/m^3	150 μg/m^3	Not to be exceeded more than once per year on average over three years
$PM_{2.5}$	24-hour	35 μg/m^3	35 μg/m^3	98th percentile averaged over three years
$PM_{2.5}$	Annual	12 μg/m^3	12 μg/m^3	Annual mean averaged over three years

1. Referenced from 40 CFR Part 50
2. Referenced from 18 AAC 50.010

PSD increments are also used for a comparison to air quality impacts from a project. A list of PSD increments for Class II areas is shown below in Table 4-20. Since GMT2 is not a major source that would trigger PSD permitting or review, a formal PSD increment consumption analysis was not conducted. Instead an assessment of impacts at the Nuiqsut community receptor was conducted comparing GMT2 impacts to the PSD increments below for the infill drilling scenario of both Alternatives A and C, which is discussed in Section 5.

Table 4-20

PSD INCREMENTS FOR CLASS II AREAS

Pollutant	Average Time	Class II PSD Increment[1]
NO_2	Annual	25 μg/m^3
SO_2	3-hour	512 μg/m^3
SO_2	24-hour	91 μg/m^3
SO_2	Annual	20 μg/m^3
PM_{10}	24-hour	30 μg/m^3
PM_{10}	Annual	17 μg/m^3
$PM_{2.5}$	24-hour	9 μg/m^3
$PM_{2.5}$	Annual	4 μg/m^3

1. Referenced from 40 CFR Part 52 Subpart A

4.2.5 HAPs Modeling

Emissions were calculated for benzene, toluene, ethylbenzene, xylenes, n-hexane, and formaldehyde. Table 4-21 shows the acute reference exposure limits (REL) or the immediately dangerous to life or health values (IDLH/10) and non-cancer reference concentrations for chronic inhalation (RfC). The IDLH/10 value was used as the standard for comparison if a REL was not available. Each HAP was modeled for a 1-hour average time to compare to the REL or IDLH/10 and an annual average time to compare to the RfC. No ambient air background levels were added to the HAP model results, as the REL, IDLH, and cancer risk values are incremental thresholds, not cumulative. HAPs were modeled for the Construction, Developmental Drilling, and Infill Drilling scenarios similar to criteria pollutants. All HAPs except for formaldehyde were modeled using a unitized setup with an emission rate of 1 gram per second (g/s). Then the unitized emission results were scaled by maximum emission rates calculated on an hourly and annual basis as detailed in the emission spreadsheets previously submitted (Kleinfelder and Ramboll Environ, 2017a, 2017b, and 2017c) and included in Appendix B. For formaldehyde, a model using actual emissions for each source was run and compared to the unitized emission model results to show that the unitized emission rate methodology yielded an over-estimate of potential impacts. The results in Section 5 show that the unitized emission rate methodology does yield a conservatively high estimate of impacts.

Cancer inhalation risk was calculated by multiplying the annual model result by the cancer unit risk factor shown in Table 4-21 along with an exposure adjustment factor. Two exposure scenarios were considered: the maximum exposed individual (MEI) and the most likely exposure (MLE). The only receptor where the cancer risk was calculated is the town of Nuiqsut as that is the only area where individuals would be potentially exposed on a long term basis. Assuming a potential 70-year total exposure and 30 year life of project, the MEI adjustment factor would be 30/70 or 0.43. Assuming most residents of Nuiqsut would stay in the area long term, the MLE would use the same adjustment factor. The calculated cancer risk was compared to a risk range of one to 100 in a million (USEPA, 2006).

Table 4-21

ACUTE, CHRONIC, AND CANCER RISK THRESHOLDS FOR HAPs

Pollutant	Acute RELs ($\mu g/m^3$)[1]	Non-cancer Chronic RfC ($\mu g/m^3$)[2]	Cancer Unit Risk Factors ($1/(\mu g/m^3)$)[2]
Benzene	1,300	30	7.8E-06
Toluene	37,000	5,000	N/A
Ethylbenzene	350,000[3]	1,000	2.5E-06
Xylenes	22,000	100	N/A
n-hexane	390,000[3]	700	N/A
Formaldehyde	55	9.8	1.3E-05

1. Values referenced from USEPA, 2014b
2. Values referenced from USEPA, 2014a
3. IDLH/10 used because no REL available from USEPA, 2014b

4.2.6 Receptors

Receptors were placed around the proposed GMT2 Drill Pad for both Alternatives A and C with fence line receptors at the pad boundary spaced 10 meters apart. From the fence line out to 100 meters, receptors had 25 meter spacing. From the boundary of the 25 meter grid, receptors were spaced at 100 meters out to 1 km and from there, receptors were placed at 250 meter spacing out to 2 km. Since the shape of the GMT2 Drill Pad for Alternative A is different than Alternative C, two separate receptor grids were created; one for each Alternative. All receptors were in the UTM NAD83 Zone 5N coordinate system.

Consistent with the modeling protocol, receptors along the access road section nearest the GMT2 Drill Pad were placed every 25 meters along the road, at least one volume source width away (equal to the road width), and then at 25-meter, 100-meter, and 250-meter spacing as noted above.

To capture cumulative source impacts that may interact with the GMT2 Project impacts, a rectangular grid was placed over the entire area to encompass GMT2 and the cumulative sources with grid spacing of 1,000 meters. Because the intent was not to specifically analyze the individual non-GMT2 source impacts, but rather any interaction of the cumulative sources with GMT2 impacts, the coarse grid receptors were not placed closer than 200 meters to any cumulative source. Considering the area surrounding the proposed GMT2 Drill Pad, cumulative impacts and therefore receptors were removed from the 50 km grid to the west and to the south as there were no additional existing sources in that area. Also, receptors approximately 5,000 meters north of the Nanushuk Pad were removed since no additional cumulative sources are more north of the location and the majority of that area is water. The location of the cumulative sources within the receptor grid is shown as Figure 13 in Appendix A

An additional receptor was placed at the town of Nuiqsut (UTM Coordinates, 575703.31 m N, 7791341.45 m E). All receptors are in the UTM NAD83 Zone 5N coordinate system.

Since the receptor grids were created from the GMT2 Drill Pad, one receptor grid for each Alternative was used for all modeling scenarios. The receptor grids used for modeling Alternative A and Alternative C scenarios are included as Figures 14 through 17, in Appendix A. Figure 14 and 15 are the receptor grids used for Alternative A. Figure 14 shows receptors out 50 kilometers including all receptors and Figure 15 a zoomed in receptor grid out to 2 kilometers to show the fine receptor spacing. Figure 16 and 17 are the receptor grids used for Alternative C. Figure 16 shows receptors out 50 kilometers including all receptors and Figure 17 a zoomed in receptor grid out to 2 kilometers to show the fine receptor spacing.

4.2.7 Terrain Elevations

The area surrounding the proposed GMT2 Drill Pad is essentially flat on a local scale, with the general terrain sloping downward generally to the north. There are not any prominent elevation features surrounding the proposed GMT2 Drill Pad. The proposed GMT2 Drill Pad is the highest elevation when compared to the cumulative sources and the town of Nanushuk with the greatest elevation difference being roughly 26 m between the proposed GMT2 Drill Pad and the lowest cumulative source, which is approximately 35 km away. Because of the slight elevation difference over this large distance, flat terrain was assumed for all receptors and cumulative source elevations and the non-regulatory default option of flat terrain was chosen.

4.2.8 Downwash

No structures or buildings were determined to be in the same vicinity as any point sources on or near the GMT2 Drill Pad. Therefore, no downwash effects were expected to occur for the GMT2

Project on the pad or otherwise. BPIP-PRIME was not used in the AERMOD model for either of the Alternatives in any of the modeling scenarios.

4.3 AMBIENT BACKGROUND DATA

The ambient air monitoring stations closest to the proposed GMT2 Project are the Nuiqsut Monitoring Station, a station at the CD1 Facility, and a station at the CD5 Pad. All three monitoring stations are operated by SLR International Corporation on behalf of CPAI. Each station is operated in accordance with USEPA PSD guidance. Additionally, as mentioned in the meteorological discussion in Section 4.1, quality assurance procedures for each station have been approved by ADEC (SLR, 2012). All three stations collect data for CO, NOx, nitric oxide (NO), NO_2, ozone, SO_2, $PM_{2.5}$, and PM_{10}. Table 4-22 lists the coordinates of each of the three monitoring stations, the three most recent years of data, and the location in relation to the GMT2 Pad. Figure 3 in Appendix A shows the location of the monitors in relation to the proposed GMT2 Drill Pad. As discussed in the near field modeling protocol (Kleinfelder & Ramboll Environ, 2017d), the Nuiqsut Monitoring Station data was chosen to be used for GMT2 background and ozone data for OLM modeling.

The Nuiqsut Monitoring Station is located at the north end of the town of Nuiqsut approximately 400 meters north west of the Nuiqsut power plant. The monitoring program, which began in 1999, is being conducted primarily to address community concerns in Nuiqsut. The Nuiqsut Monitoring Station also collects wind direction and speed, among other meteorological data as discussed in Section 4.1. Based on the wind rose (Figure 4) from data collected at the Nuiqsut Monitoring Station, the wind predominately blows from the east north east and east directions (SLR, 2015b, 2016c, 2017b).

Table 4-22

AMBIENT AIR MONITORING STATIONS NEAR THE PROPOSED GMT2 DRILL PAD

Name of Monitoring Station	UTM NAD83 Zone 5 Easting (meters)	UTM NAD83 Zone 5 Northing (meters)	Current three years of data	Distance and Direction from GMT2 Drill Pad
Nuiqsut	575,512	7,792,061	2014 - 2016	17 miles east north-east
CD1 Facility	577,629	7,805,334	2013 - 2015	22 miles north-east
CD5 Pad	566,770	7,801,707	Oct 2015 – Dec 2016	15 north north-east

Table 4-24 shows the background values from 2014 through 2016 along with the final background value used in the near field modeling analysis and the form of the data value chosen. The values are referenced directly from the Annual Data Reports (ADRs) (SLR, 2015b, 2016c, 2017b) except for SO_2, NO_2 and PM_{10}, as the data in the reports have gone through quality analysis procedures with the correct number of significant figures reported. After review by the USEPA of the 2014 data, it was noted that the background value for SO_2 was calculated incorrectly (USEPA, 2017). After review of the raw background values, the recalculation of the 99th percentile of the daily maximum 1-hour average of SO_2 was 1.5 parts per billion (ppb) instead of the ADR value of 1.1 ppb. For NO_2, a seasonally-varying hourly background value was input into the AERMOD value calculated with the procedure described at the end of this section. For PM_{10}, a monthly background value was input into the AERMOD model, as described in this section.

After review of the background PM_{10} values, there were a number of hours within 2014, 2015, 2016 where high wind events caused unrepresentative hourly and daily readings. Furthermore, the Nuiqsut Monitoring station is known to capture PM_{10} from the Nigliq Channel during such high wind events (AECOM, 2013b) and there will not be a similar channel with sediment near the proposed GMT2 Drill Pad, substantiating their removal from the background value analysis for PM_{10}. The days along with their daily average speed that were removed from the PM_{10} background analysis are listed in Table 4-23.

Table 4-23

DAYS AND METEOROLOGY REMOVED FROM PM_{10} BACKGROUND ANALYSIS

Date	PM_{10} Maximum Daily Value ($\mu g/m^3$)	Average Daily Wind Speed (m/s)	Average Annual Wind Speed (m/s)
July 9, 2014	70.0	8.6	4.9
August 14, 2014	67.3	10.0	4.9
August 13, 2014	67.1	9.4	4.9
August 7, 2014	59.4	9.3	4.9
August 8, 2014	48.0	11.0	4.9
July 22, 2015	145.0	8.2	4.8
July 6, 2015	99.0	5.3	4.8
July 24, 2016	149.8	7.8	5.0
November 3, 2016	128.8	12.0	5.0
August 5, 2016	116.1	8.1	5.0
October 13, 2016	62.0	9.4	5.0

For all the criteria pollutants and average times, a single background value was added to the model results shown in Table 4-14, except for 1-hour NO_2, annual NO_2, and 24-hour PM_{10}. Similar to the GMT1 AQIA revisions (AECOM, 2013c), three years of background data were analyzed on a seasonal and then hourly basis for 1-hour background NO_2 values. For consistency purposes, the same methodology was applied for the GMT2 seasonally varying hourly background calculations for years 2014, 2015, and 2016. Season 1 included December through February hourly background values, Season 2 included March through May, Season 3 included June through August, and Season 4 included September through November. The 98th percentile value for each hour of each day within each of the seasons for 2014, 2015, and 2016 was calculated and then averaged to determine a three-year average for each hour of each season as shown in Table 4-25. NO_2 values are presented in ppb. To ensure that outlier or inaccurate data were not captured, only sufficiently valid observations were averaged as shown in Table 4-26. Note that Hour 4 of Season 3 during 2015 only had 37% valid observations. It was determined that was an insufficient amount of valid observations, and therefore its 98th percentile value was not included in the three-year average. These values were input as the NO_2 background factor for all onsite project, offsite project, and cumulative sources within the AERMOD model.

For the use of OLM for NO_2 modeling, raw ozone data from the Nuiqsut Monitoring Station ADR reports (SLR, 2015, 2016, 2017) were used. For days and hours where there were missing ozone values, calibration, or sampling took place, the average ozone value of that month was used to fill in the missing hours.

Similarly to NO_2 background values, a detailed review of the background values for PM_{10} showed large variation in concentrations on a seasonal basis. Because of the existing climate, particulate emissions are rare during non-summer months (October through May). As discussed previously, and shown in Table 4-23, higher PM_{10} background concentrations at the Nuiqsut Monitoring station generally occur during due to high wind events and its proximity to the Nigliq Channel. Shown in Table 4-27, the maximum (highest first high) PM_{10} background values were found for each month during 2014, 2015, and 2016 after removal of the unrepresentative high wind days shown in Table 4-23. Per 40 CFR Part 50 Appendix K, the average of the highest first high PM_{10} background values for each month are rounded to the nearest 1 µg/m^3, and then rounded to the nearest 10 µg/m^3 for the purposes of determining exceedances (40 CFR Part 50 Appendix K 4.2(b)). Therefore, the monthly background values in the Average PM_{10} H1H Background Value to nearest ten (µg/m^3) column of Table 4-27 were input into the AERMOD model for 24-hour PM_{10} for all onsite project, offsite project, and cumulative sources. The model output result included the background concentration and no value was added afterwards.

Table 4-24

NUIQSUT MONITORING STATION DATA SUMMARY

Pollutant	Average Time	2014	2015	2016	Final Value	Data Value
CO	1-hour[1]	1 ppm	1 ppm	1 ppm	1 ppm	Maximum second high value from three years of data
CO	8-hour[1]	1 ppm	1 ppm	1 ppm	1 ppm	Maximum second high value from three years of data
NO_2	1-hour	-	-	-	-	See Table 4-25
NO_2	Annual	-	-	-	-	See Table 4-25
SO_2	1-hour	1.5 ppb	1.2 ppb	3.2 ppb	2.1 ppb	99th percentile averaged over three years
SO_2	3-hour	2.2 ppb	0.0 ppb	0.0 ppb	2.2 ppb	Maximum second high value from three years of data
SO_2	24-hour	1.7 ppb	0.00 ppb	0.00 ppb	1.7 ppb	Maximum second high value from three years of data
SO_2	Annual	0.000[3] ppb	0.000 ppb	0.001 ppb	0.001 ppb	Maximum value from three years of data
PM_{10}	24-hour	-	-	-	-	See Table 4-27
$PM_{2.5}$	24-hour	6 µg/m^3	10 µg/m^3	6 µg/m^3	7.3 µg/m^3	98th percentile averaged over three years
$PM_{2.5}$	Annual	2.1 µg/m^3	2.8 µg/m^3	1.3 µg/m^3	2.1 µg/m^3	Annual mean averaged over three years

1. 1-hour and 8-hour CO values are reported as the same value based on precision in the report.
2. Values referenced from SLR, 2015, 2016, 2017
3. Value was reported as -0.1 ppb, so a value of 0.000 ppb assumed for this report.
4. Maximum second high value after removal of unrepresentative high wind events.

Table 4-25

98TH PERCENTILE HOURLY NO_2 VALUES BY HOUR AND SEASON

3-Year Average	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Season 1	12.24	12.98	14.19	13.62	12.27	15.26	14.28	13.00	12.82	11.97	14.67	11.34	13.71	14.84	14.54	14.96	13.98	18.21	15.71	14.17	15.37	14.85	15.11	11.26
Season 2	11.98	14.29	13.19	14.59	15.57	14.84	10.73	9.44	8.49	9.94	7.07	6.63	6.08	4.68	5.37	5.44	4.96	7.97	8.70	9.65	10.12	13.10	11.13	11.66
Season 3	7.68	7.13	6.25	6.62	4.53	4.69	4.91	4.58	4.26	3.65	3.91	3.72	4.04	4.84	4.29	4.00	3.70	4.21	4.69	4.70	5.47	6.05	8.17	7.64
Season 4	4.23	4.52	5.05	4.74	5.25	4.77	5.59	5.51	5.66	6.64	6.31	5.75	6.04	5.65	5.60	5.68	5.28	5.83	5.98	5.57	6.95	5.81	4.62	4.32
2014	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**
Season 1	15.25	15.42	16.67	19.34	14.25	15.97	14.87	11.72	9.12	10.14	12.19	11.44	15.66	13.32	10.28	11.72	17.09	21.23	16.94	19.86	19.82	19.34	21.81	14.85
Season 2	15.90	16.08	14.03	17.40	24.88	21.65	15.22	13.81	12.08	11.04	7.39	6.65	5.30	5.79	7.38	6.29	4.98	11.90	10.20	12.88	16.33	21.37	16.33	17.29
Season 3	6.02	5.94	4.20	5.10	4.82	4.44	4.51	4.54	4.31	4.37	3.93	4.25	4.44	5.41	4.50	4.16	4.72	4.74	5.06	5.08	5.85	5.82	7.84	6.16
Season 4	3.24	4.04	4.26	4.39	4.18	4.22	3.92	4.76	4.38	7.27	6.06	5.98	5.30	6.64	6.37	5.71	5.41	5.67	5.71	5.51	5.29	5.22	4.42	3.86
2015	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**
Season 1	12.87	13.70	14.40	12.31	12.59	18.90	15.15	12.68	18.07	14.46	19.52	9.45	10.56	15.90	18.11	21.21	12.64	15.24	17.24	11.92	17.51	14.64	13.31	11.22
Season 2	11.42	14.56	14.54	7.96	10.16	10.50	9.40	6.08	6.94	8.00	7.48	7.54	8.08	3.99	4.34	5.03	4.84	5.59	9.16	7.90	7.86	10.19	10.51	10.66
Season 3	8.04	6.49	5.04	4.60	4.14	4.79	5.07	3.90	4.16	3.06	2.99	3.19	3.38	4.37	4.12	3.90	2.99	3.68	3.87	5.40	5.67	5.10	6.14	6.70
Season 4	4.40	4.54	4.94	3.18	5.26	5.68	6.40	6.28	7.29	6.66	6.86	5.88	6.50	5.26	5.36	6.44	5.46	5.49	6.12	5.54	6.93	4.96	3.51	3.91
2016	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**
Season 1	8.60	9.80	11.51	9.20	9.98	10.90	12.82	14.60	11.27	11.32	12.30	13.12	14.92	15.29	15.22	11.94	12.20	18.18	12.94	10.74	8.78	10.58	10.20	7.72
Season 2	8.63	12.22	10.99	18.40	11.67	12.36	7.56	8.42	6.46	10.78	6.34	5.71	4.86	4.25	4.37	4.99	5.04	6.40	6.74	8.17	6.16	7.73	6.55	7.03
Season 3	8.97	8.97	9.52	8.14	4.62	4.84	5.17	5.29	4.32	3.51	4.80	3.72	4.29	4.73	4.25	3.92	3.38	4.21	5.14	3.63	4.89	7.24	10.52	10.05
Season 4	5.06	4.98	5.95	6.65	6.32	4.42	6.44	5.50	5.30	6.00	6.00	5.38	6.32	5.04	5.06	4.90	4.98	6.34	6.10	5.66	8.64	7.24	5.94	5.18

Table 4-26
VALID OBSERVATIONS OF HOURLY NO_2 BY HOUR AND SEASON

Year/Season	Hour	Hour	Hour	Hour	Hour	Hour	Hour	Hour	Hour	Hour	Hour	Hour	Hour	Hour	Hour	Hour	Hour	Hour	Hour	Hour	Hour	Hour	Hour	Hour
2014	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**
Season 1	94%	94%	93%	79%	93%	93%	93%	93%	92%	92%	93%	94%	94%	94%	94%	94%	94%	94%	94%	94%	94%	94%	94%	94%
Season 2	96%	96%	91%	78%	92%	93%	95%	96%	92%	93%	93%	95%	95%	93%	93%	96%	96%	96%	95%	95%	96%	96%	95%	93%
Season 3	99%	99%	98%	85%	99%	99%	98%	99%	98%	95%	95%	96%	97%	98%	98%	99%	99%	98%	98%	99%	98%	98%	99%	99%
Season 4	100%	100%	99%	85%	100%	100%	98%	100%	98%	99%	96%	100%	100%	99%	99%	99%	99%	99%	99%	99%	99%	100%	100%	100%
2015	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**
Season 1	99%	99%	99%	83%	99%	99%	99%	99%	99%	97%	97%	96%	98%	98%	98%	98%	98%	99%	99%	99%	99%	99%	99%	99%
Season 2	88%	88%	88%	67%	88%	87%	88%	88%	87%	88%	88%	87%	87%	87%	86%	86%	86%	85%	86%	86%	86%	87%	87%	87%
Season 3	93%	93%	95%	37%	88%	93%	91%	92%	88%	88%	85%	87%	87%	87%	90%	91%	90%	90%	91%	91%	91%	91%	91%	92%
Season 4	93%	93%	92%	60%	91%	92%	92%	91%	90%	89%	88%	87%	89%	89%	89%	89%	89%	90%	91%	92%	93%	93%	92%	92%
2016	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**
Season 1	100%	100%	99%	83%	100%	100%	100%	100%	99%	96%	96%	93%	94%	96%	97%	98%	99%	99%	100%	100%	100%	100%	100%	100%
Season 2	92%	92%	92%	79%	92%	92%	92%	92%	89%	88%	90%	89%	90%	90%	90%	89%	90%	91%	91%	91%	92%	92%	92%	92%
Season 3	100%	100%	100%	86%	100%	100%	98%	97%	97%	96%	95%	97%	97%	97%	98%	97%	99%	100%	100%	100%	100%	100%	100%	100%
Season 4	100%	100%	99%	86%	100%	100%	100%	100%	98%	97%	98%	97%	99%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Table 4-27
HIGHEST FIRST HIGH PM_{10} BACKGROUND VALUES BY MONTH

Month	2014 PM_{10} H1H Background Value (µg/m^3)	2015 PM_{10} H1H Background Value (µg/m^3)	2016 PM_{10} H1H Background Value (µg/m^3)	Average PM_{10} H1H Background Value (µg/m^3)	Average PM_{10} H1H Background Value to nearest ten (µg/m^3)
January	16.33	10.50	9.50	12.1	10
February	7.54	15.13	10.67	11.1	10
March	10.45	11.46	15.42	12.4	10
April	7.87	8.96	14.71	10.5	10
May	15.00	11.44	43.96	23.5	20
June	40.13	43.67	42.58	42.1	40
July	25.13	51.54	36.08	37.6	40
August	36.29	11.17	28.75	25.4	30
September	23.04	39.58	44.58	35.7	40
October	10.83	11.71	34.67	19.1	20
November	7.67	9.67	25.42	14.3	10
December	12.86	14.08	13.54	13.5	10

5 NEAR FIELD AIR QUALITY IMPACT ANALYSIS RESULTS

The results from the near field modeling are detailed below. All modeling was conducted per the detailed methodology, emission rates, input parameters, and source factors detailed in Chapters 3 and 4.

5.1 CRITERIA POLLUTANTS

The results of the near-field analysis for criteria pollutants for Alternative A of the GMT2 project showed the maximum potential impacts receptor are less than the NAAQS/AAAQS for all standards as listed in Tables 5-1 through 5-6 for the Construction, Developmental Drilling, and Infill Drilling modeling scenarios. For Alternative C, results for the Construction, Developmental Drilling, and Infill Drilling modeling scenarios showed the maximum potential are less than the NAAQS/AAAQS. For each of the modeling scenarios and Alternatives, the maximum impact receptor for each pollutant and averaging period differed, however most of the impacts were determined to be on or near the GMT2 Drill Pad fenceline. The exception to this was all averaging periods (1-hour, 3-hour, 24-hour, and annual) for SO_2. The draft AQIA of the Nanushuk Project shows increasingly high SO_2 emissions during their operational phase from turbines and flare. Therefore, the maximum impact from SO_2 is near the Nanushuk Pad and is an order of 6 to 174 times higher than any impact found near the GMT2 Drill Pad.

As described in Section 4.2.6, a receptor was placed at the town of Nuiqsut 17 miles from the GMT2 Drill Pad to determine impacts on the Nuiqsut community. Similar to the impacts near the GMT2 Drill Pad, concentrations for all criteria pollutants and averaging periods were below the NAAQS/AAAQS at the town of Nuiqsut for Alternative A and C Construction, Developmental Drilling, and Infill Drilling scenarios. Impacts at the Nuiqsut community are a maximum of 51% of the maximum impact results. These results are not detailed within this report, however can be found within the modeling files.

For comparison between Alternative A and Alternative C similar modeling scenarios, it is important to note that separate receptor grids were set up for each Alternative, as described in Section 4.2.6. Since the receptor grid began from the GMT2 Drill Pad, the shape of the pad was critical in receptor location. Therefore, it is possible that maximum impacts for Alternative C are different than Alternative A for the same pollutant and averaging period and the location of the maximum impact is likely different based on this fact.

Table 5-1
ALTERNATIVE A CONSTRUCTION SCENARIO CRITERIA POLLUTANT RESULTS

Pollutant	Average Time	Rank	Modeled Result (µg/m³)	Background (µg/m³)	Total (µg/m³)	NAAQS/AAAQS (µg/m³)	% of Standard
CO	1-hour	H2H	144.6	1,230	1,375	40,000 µg/m³	3%
CO	8-hour	H2H	68.67	1,230	1,299	10,000 µg/m³	13%
NO_2	1-hour	98th	165.6	-	165.6	188 µg/m³	88%
NO_2	Annual	Max	25.07	-	25.07	100 µg/m³	25%
SO_2	1-hour	99th	28.30	5.9	34.2	196 µg/m³	17%
SO_2	3-hour	H2H	32.89	6.2	39.1	1,300 µg/m³	3%
SO_2	24-hour	H2H	17.26	4.8	22.1	365 µg/m³	6%
SO_2	Annual	Max	0.74	0.003	0.74	80 µg/m³	1%
PM_{10}	24-hour	H6H	64.31	-	64.31	150 µg/m³	43%
$PM_{2.5}$	24-hour	98th	18.59	7.3	25.9	35 µg/m³	74%
$PM_{2.5}$	Annual	H1H	0.84	2.1	2.9	12 µg/m³	25%

1. Background values for NO_2 and PM_{10} were included in AERMOD and are included in the model result.

Table 5-1
ALTERNATIVE A CONSTRUCTION SCENARIO CRITERIA POLLUTANT RESULTS

Pollutant	Average Time	Rank	Maximum Modeled Result (µg/m³)	Maximum Onsite GMT2 Sources' Modeled Result (µg/m³)
CO	1-hour	H2H	144.6	124.2
CO	8-hour	H2H	68.67	68.67
NO_2	1-hour	98th	165.6	159.4
NO_2	Annual	Max	25.07	24.02
SO_2	1-hour	99th	28.30	0.46
SO_2	3-hour	H2H	32.89	0.33
SO_2	24-hour	H2H	17.26	0.13
SO_2	Annual	Max	0.74	0.018
PM_{10}	24-hour	H6H	64.31	64.26
$PM_{2.5}$	24-hour	98th	18.59	5.75
$PM_{2.5}$	Annual	H1H	0.84	0.81

1. Background values for NO_2 and PM_{10} were included in AERMOD and are included in the model result.

Table 5-2

ALTERNATIVE A DEVELOPMENTAL DRILLING SCENARIO CRITERIA POLLUTANT RESULTS

Pollutant	Average Time	Rank	Modeled Result (µg/m³)	Background (µg/m³)	Total (µg/m³)	NAAQS/AAAQS (µg/m³)	% of Standard
CO	1-hour	H2H	370.3	1,230	1,600	40,000 µg/m³	4%
CO	8-hour	H2H	170.1	1,230	1,400	10,000 µg/m³	14%
NO_2	1-hour	98th	166.2	-	166.2	188 µg/m³	88%
NO_2	Annual	Max	35.92	-	35.9	100 µg/m³	36%
SO_2	1-hour	99th	28.30	5.9	34.2	196 µg/m³	17%
SO_2	3-hour	H2H	32.89	6.2	39.1	1,300 µg/m³	3%
SO_2	24-hour	H2H	17.26	4.8	22.1	365 µg/m³	6%
SO_2	Annual	Max	0.74	0.003	0.74	80 µg/m³	1%
PM_{10}	24-hour	H6H	121.0	-	121.0	150 µg/m³	81%
$PM_{2.5}$	24-hour	98th	18.59	7.3	25.9	35 µg/m³	74%
$PM_{2.5}$	Annual	H1H	2.04	2.1	4.1	12 µg/m³	35%

1. Background values for NO_2 and PM_{10} were included in AERMOD and are included in the model result.

Table 5-2

ALTERNATIVE A DEVELOPMENTAL DRILLING SCENARIO CRITERIA POLLUTANT RESULTS

Pollutant	Average Time	Rank	Maximum Modeled Result (µg/m³)	Maximum Onsite GMT2 Sources' Modeled Result (µg/m³)
CO	1-hour	H2H	370.3	370.3
CO	8-hour	H2H	170.1	169.6
NO_2	1-hour	98th	166.2	165.5
NO_2	Annual	Max	35.92	34.89
SO_2	1-hour	99th	28.30	2.12
SO_2	3-hour	H2H	32.89	1.61
SO_2	24-hour	H2H	17.26	0.85
SO_2	Annual	Max	0.74	0.091
PM_{10}	24-hour	H6H	121.0	121.0
$PM_{2.5}$	24-hour	98th	18.59	8.78
$PM_{2.5}$	Annual	H1H	2.04	2.00

1. Background values for NO_2 and PM_{10} were included in AERMOD and are included in the model result.

Table 5-3

ALTERNATIVE A INFILL DRILLING SCENARIO CRITERIA POLLUTANT RESULTS

Pollutant	Average Time	Rank	Modeled Result ($\mu g/m^3$)	Background ($\mu g/m^3$)	Total ($\mu g/m^3$)	NAAQS/AAAQS ($\mu g/m^3$)	% of Standard
CO	1-hour	H2H	261.6	1,230	1,492	40,000 $\mu g/m^3$	4%
CO	8-hour	H2H	166.4	1,230	1,396	10,000 $\mu g/m^3$	14%
NO_2	1-hour	98th	148.0	-	148.0	188 $\mu g/m^3$	79%
NO_2	Annual	Max	33.42	-	33.4	100 $\mu g/m^3$	33%
SO_2	1-hour	99th	28.30	5.9	34.2	196 $\mu g/m^3$	17%
SO_2	3-hour	H2H	32.89	6.2	39.1	1,300 $\mu g/m^3$	3%
SO_2	24-hour	H2H	17.26	4.8	22.1	365 $\mu g/m^3$	6%
SO_2	Annual	Max	0.75	0.003	0.75	80 $\mu g/m^3$	1%
PM_{10}	24-hour	H6H	109.7	-	109.7	150 $\mu g/m^3$	73%
$PM_{2.5}$	24-hour	98th	18.59	7.3	25.9	35 $\mu g/m^3$	74%
$PM_{2.5}$	Annual	H1H	1.94	2.1	4.0	12 $\mu g/m^3$	34%

1. Background values for NO_2 and PM_{10} were included in AERMOD and are included in the model result.

Table 5-3

ALTERNATIVE A INFILL DRILLING SCENARIO CRITERIA POLLUTANT RESULTS

Pollutant	Average Time	Rank	Maximum Modeled Result ($\mu g/m^3$)	Maximum Onsite GMT2 Sources' Modeled Result ($\mu g/m^3$)
CO	1-hour	H2H	261.6	261.5
CO	8-hour	H2H	166.4	165.7
NO_2	1-hour	98th	148.0	144.3
NO_2	Annual	Max	33.42	32.92
SO_2	1-hour	99th	28.30	2.10
SO_2	3-hour	H2H	32.89	1.82
SO_2	24-hour	H2H	17.26	0.73
SO_2	Annual	Max	0.75	0.10
PM_{10}	24-hour	H6H	109.7	109.6
$PM_{2.5}$	24-hour	98th	18.59	6.88
$PM_{2.5}$	Annual	H1H	1.94	1.92

1. Background values for NO_2 and PM_{10} were included in AERMOD and are included in the model result.

Table 5-4

ALTERNATIVE C CONSTRUCTION SCENARIO CRITERIA POLLUTANT RESULTS

Pollutant	Average Time	Rank	Modeled Result (µg/m^3)	Background (µg/m^3)	Total (µg/m^3)	NAAQS/AAAQS (µg/m^3)	% of Standard
CO	1-hour	H2H	266.5	1,230	1,497	40,000 µg/m^3	4%
CO	8-hour	H2H	84.85	1,230	1,315	10,000 µg/m^3	13%
NO_2	1-hour	98th	161.9	-	161.9	188 µg/m^3	86%
NO_2	Annual	Max	25.28	-	25.3	100 µg/m^3	25%
SO_2	1-hour	99th	42.16	5.9	48.1	196 µg/m^3	25%
SO_2	3-hour	H2H	82.10	6.2	88.3	1,300 µg/m^3	7%
SO_2	24-hour	H2H	31.37	4.8	36.2	365 µg/m^3	10%
SO_2	Annual	Max	0.75	0.003	0.75	80 µg/m^3	1%
PM_{10}	24-hour	H6H	91.74	-	91.7	150 µg/m^3	61%
$PM_{2.5}$	24-hour	98th	18.59[2]	7.3	25.9	35 µg/m^3	74%
$PM_{2.5}$	Annual	H1H	1.27	2.1	3.37	12 µg/m^3	28%

1. Background values for NO_2 and PM_{10} were included in AERMOD and are included in the model result.
2. See discussion at the end of this Section.

Table 5-4

ALTERNATIVE C CONSTRUCTION SCENARIO CRITERIA POLLUTANT RESULTS

Pollutant	Average Time	Rank	Maximum Modeled Result (µg/m^3)	Maximum Onsite GMT2 Sources' Modeled Result (µg/m^3)
CO	1-hour	H2H	266.5	266.4
CO	8-hour	H2H	84.85	84.84
NO_2	1-hour	98th	161.9	159.7
NO_2	Annual	Max	25.28	24.69
SO_2	1-hour	99th	42.16	0.67
SO_2	3-hour	H2H	82.10	0.50
SO_2	24-hour	H2H	31.37	0.18
SO_2	Annual	Max	0.75	0.013
PM_{10}	24-hour	H6H	91.74	90.92
$PM_{2.5}$	24-hour	98th	18.59[2]	6.24
$PM_{2.5}$	Annual	H1H	1.27	1.26

1. Background values for NO_2 and PM_{10} were included in AERMOD and are included in the model result.
2. See discussion at the end of this Section.

Table 5-5

ALTERNATIVE C DEVELOPMENTAL DRILLING SCENARIO CRITERIA POLLUTANT RESULTS

Pollutant	Average Time	Rank	Modeled Result ($\mu g/m^3$)	Background ($\mu g/m^3$)	Total ($\mu g/m^3$)	NAAQS/AAAQS ($\mu g/m^3$)	% of Standard
CO	1-hour	H2H	542.4	1,230	1,772	40,000 $\mu g/m^3$	4%
CO	8-hour	H2H	228.0	1,230	1,458	10,000 $\mu g/m^3$	15%
NO_2	1-hour	98th	170.5	-	170.5	188 $\mu g/m^3$	91%
NO_2	Annual	Max	34.66	-	34.7	100 $\mu g/m^3$	35%
SO_2	1-hour	99th	42.16	5.9	48.1	196 $\mu g/m^3$	25%
SO_2	3-hour	H2H	82.10	6.2	88.3	1,300 $\mu g/m^3$	7%
SO_2	24-hour	H2H	31.37	4.8	36.2	365 $\mu g/m^3$	10%
SO_2	Annual	Max	0.75	0.003	0.75	80 $\mu g/m^3$	1%
PM_{10}	24-hour	H6H	122.8	-	122.8	150 $\mu g/m^3$	82%
$PM_{2.5}$	24-hour	98th	18.59[2]	7.3	25.9	35 $\mu g/m^3$	74%
$PM_{2.5}$	Annual	H1H	2.47	2.1	4.6	12 $\mu g/m^3$	38%

1. Background values for NO_2 and PM_{10} were included in AERMOD and are included in the model result.
2. See discussion at the end of this Section.

Table 5-5

ALTERNATIVE C DEVELOPMENTAL DRILLING SCENARIO CRITERIA POLLUTANT RESULTS

Pollutant	Average Time	Rank	Maximum Modeled Result ($\mu g/m^3$)	Maximum Onsite GMT2 Sources' Modeled Result ($\mu g/m^3$)
CO	1-hour	H2H	542.4	542.4
CO	8-hour	H2H	228.0	227.7
NO_2	1-hour	98th	170.5	169.6
NO_2	Annual	Max	34.66	33.51
SO_2	1-hour	99th	42.16	2.26
SO_2	3-hour	H2H	82.10	1.89
SO_2	24-hour	H2H	31.37	0.97
SO_2	Annual	Max	0.75	0.080
PM_{10}	24-hour	H6H	122.8	122.8
$PM_{2.5}$	24-hour	98th	18.59[2]	10.13
$PM_{2.5}$	Annual	H1H	2.47	2.40

1. Background values for NO_2 and PM_{10} were included in AERMOD and are included in the model result.
2. See discussion at the end of this Section.

Table 5-6

ALTERNATIVE C INFILL DRILLING SCENARIO CRITERIA POLLUTANT RESULTS

Pollutant	Average Time	Rank	Modeled Result (µg/m³)	Background (µg/m³)	Total (µg/m³)	NAAQS/AAAQS (µg/m³)	% of Standard
CO	1-hour	H2H	421.0	1,230	1,651	40,000 µg/m³	4%
CO	8-hour	H2H	273.4	1,230	1,503	10,000 µg/m³	15%
NO_2	1-hour	98th	179.0	-	179.0	188 µg/m³	95%
NO_2	Annual	Max	37.37	-	37.4	100 µg/m³	37%
SO_2	1-hour	99th	42.16	5.9	48.1	196 µg/m³	25%
SO_2	3-hour	H2H	82.10	6.2	88.3	1,300 µg/m³	7%
SO_2	24-hour	H2H	31.37	4.8	36.2	365 µg/m³	10%
SO_2	Annual	Max	0.75	0.003	0.75	80 µg/m³	1%
PM_{10}	24-hour	H6H	129.8	-	129.8	150 µg/m³	87%
$PM_{2.5}$	24-hour	98th	18.59[2]	7.3	25.9	35 µg/m³	74%
$PM_{2.5}$	Annual	H1H	2.98	2.1	5.1	12 µg/m³	42%

3. Background values for NO_2 and PM_{10} were included in AERMOD and are included in the model result.
4. See discussion at the end of this Section.

Table 5-6

ALTERNATIVE C INFILL DRILLING SCENARIO CRITERIA POLLUTANT RESULTS

Pollutant	Average Time	Rank	Maximum Modeled Result (µg/m³)	Maximum Onsite Sources' Modeled Result (µg/m³)
CO	1-hour	H2H	421.0	418.8
CO	8-hour	H2H	273.4	271.9
NO_2	1-hour	98th	179.0	175.5
NO_2	Annual	Max	37.37	36.70
SO_2	1-hour	99th	42.16	3.34
SO_2	3-hour	H2H	82.10	2.68
SO_2	24-hour	H2H	31.37	1.35
SO_2	Annual	Max	0.75	0.12
PM_{10}	24-hour	H6H	129.8	129.7
$PM_{2.5}$	24-hour	98th	18.59[2]	11.17
$PM_{2.5}$	Annual	H1H	2.98	2.96

1. Background values for NO_2 and PM_{10} were included in AERMOD and are included in the model result.
2. See discussion at the end of this Section.

The results for Alternative C 24-hour $PM_{2.5}$ under the Construction, Developmental Drilling, and Infill Drilling scenarios were reviewed since 100% of the maximum impact was from non-project sources. The maximum impact was verified to be the nearest receptor west of the Nanushuk Drill Site 2 (NANUD2), approximately 25 miles northeast of the GMT2 Drill Pad (receptor 587,000 m

North, 7,805,000 m East). As noted in Tables 5-4 through 5-6, the maximum onsite source modeled impacts are approximately one-third of this receptor leading to the conclusion that emissions from the Nanushuk Drill Site 2 cumulative source were influencing the receptor rather than the GMT2 Project. Therefore, this receptor was removed from the analysis and the next highest impact was included in Tables 5-4 through 5-6. The receptor for which the results in Tables 5-4 through 5-6 were included was also near the Nanushuk Drill Site 2, but closer to the GMT2 Drill Pad where it is more likely that impacts from the GMT2 Project were captured.

5.2 PSD INCREMENT ANALYSIS

As mentioned in Section 4.2.4, an analysis comparing the GMT2 project to the PSD increments was conducted to assess potential impacts so as to inform local and state regulatory agencies. There are no Class I or Class II areas located within 50 km of the GMT2 project, however the Nuiqsut community is approximately 17 miles away. So as to be conservative, the GMT2 project impact concentrations at the Nuiqsut receptor from the Infill Drilling scenarios of Alternative A and Alternative C were compared against the PSD Class II increments listed in Table 5-7 below. Since the Infill Drilling scenario includes drilling, well intervention, and routine operations emissions, the PSD increment analysis was conservative as drilling and well intervention sources are temporary and PSD analyses are generally conducted for consistent, and continuous operations. The results are listed in Tables 5-7 (Alternative A Infill Drilling Scenario) and 5-8 (Alternative C Infill Drilling Scenario).

Table 5-7

PSD INCREMENT COMPARISON AT NUIQSUT RECEPTOR FOR ALTERNATIVE A INFILL DRILLING SCENARIO

Pollutant	Average Time	Rank	Nuiqsut Receptor Modeled Result ($\mu g/m^3$)	Class II PSD Increment ($\mu g/m^3$)	Above the Increment?
NO_2	Annual[1]	Max	8.61	25	No
SO_2	3-hour	H2H	3.54	512	No
SO_2	24-hour	H2H	1.23	91	No
SO_2	Annual	Max	0.087	20	No
PM_{10}	24-hour[1]	H6H	1.41	30	No
$PM_{2.5}$	24-hour	98th	3.16	9	No
$PM_{2.5}$	Annual	H1H	0.026	4	No

Table 5-8

PSD INCREMENT COMPARISON AT NUIQSUT RECEPTOR FOR ALTERNATIVE C INFILL DRILLING SCENARIO

Pollutant	Average Time	Rank	Nuiqsut Receptor Modeled Result (µg/m^3)	Class II PSD Increment (µg/m^3)	Above the Increment?
NO_2	Annual	Max	8.65	25	No
SO_2	3-hour	H2H	3.54	512	No
SO_2	24-hour	H2H	1.23	91	No
SO_2	Annual	Max	0.087	20	No
PM_{10}	24-hour	H6H	1.35	30	No
$PM_{2.5}$	24-hour	98th	3.16	9	No
$PM_{2.5}$	Annual	H1H	0.027	4	No

In the AERMOD files, the annual NO_2 and 24-hour PM_{10} modeled results at the Nuiqsut receptor includes background concentrations as background values were input into AERMOD rather than added afterwards. Therefore, the concentrations listed for annual NO_2 and 24-hour PM_{10} modeled result at the Nuiqsut receptor in the tables above (Tables 5-7 and 5-8) were revised to be purely modeled impacts without background since PSD increment comparison do not include background concentrations in the modeled impacts.

Also, a PSD increment for Class II areas exists for annual PM_{10} as shown in Table 4-20. A separate run was not conducted for analysis of annual PM_{10} since the 24-hour PM_{10} modeled impacts at the Nuiqsut receptor are below both the 24-hour and annual PM_{10} increments. Since the short term concentration is below the increment level for both averaging periods, without modeling it is known that the annual increment for PM_{10} will not be exceeded.

A new project can impact future development that is limited by PSD increment consumption by taking up some of the increment. Because this project is not near a Class II area, it is not expected that this project could impact future development. In addition as many of these emission sources are temporary, if future consumption analysis did include the GMT2 project, emissions would be smaller than what are analyzed here (i.e. only continuous operation).

5.3 HAP POLLUTANTS

For comparison to RELs and RfCs, toxic modeling was conducted and evaluated. The evaluations against the RELs and RfCs were done using the maximum concentration of the unitized model on an hourly and annual basis and using the maximum hourly and average annual emissions of each HAP to scale the AERMOD results. The maximum hourly and annual impacts of the unitized runs all occurred near or on the fenceline of the GMT2 Drill Pad. Cancer risk was evaluated for the Nuiqsut community using the procedures discussed in Section 4.2.5. As shown in Tables 5-9 through 5-14, the concentrations of all HAPs are well below their respective RELs on an hourly period, and RfCs on an annual period. Furthermore, the cancer risk is much less than the threshold of 10 in a million (10 E-06) at the Town of Nuiqsut.

As mentioned in Section 4.2.5, formaldehyde was modeled in two ways: (1) unitized model results scaled by actual emissions and (2) actual emissions for each individual source. The purpose was to demonstrate that the unitized emission methodology over-estimated impacts and this indeed was the result. Since the individual source model results for formaldehyde are available, they are shown in Tables 5-9 through 5-14, while for the other HAPs, the results are from the unitized emission rate methodology.

Table 5-9

ALTERNATIVE A CONSTRUCTION SCENARIO HAP RESULTS

Pollutant	1-hour Result (µg/m^3)	REL (µg/m^3)	Annual Result (µg/m^3)	RfC (µg/m^3)	Cancer Risk at Nuiqsut Receptor
Benzene	64.07	1,300	0.33	30	5.2 E-09
Toluene	61.94	37,000	0.32	5,000	NA
Ethylbenzene	13.49	350,000	0.064	1,000	3.2 E-10
Xylenes	56.25	22,000	0.27	100	NA
n-hexane	6.74	390,000	0.035	700	NA
Formaldehyde	10.29	55	0.24	9.8	3.0 E-09
				Total Cancer Risk:	8.5 E-09

Table 5-10

ALTERNATIVE A DEVELOPMENTAL DRILLING SCENARIO HAP RESULTS

Pollutant	1-hour Result (µg/m³)	REL (µg/m³)	Annual Result (µg/m³)	RfC (µg/m³)	Cancer Risk at Nuiqsut Receptor
Benzene	54.09	1,300	1.29	30	8.1 E-09
Toluene	48.26	37,000	0.99	5,000	NA
Ethylbenzene	9.33	350,000	0.19	1,000	3.7 E-10
Xylenes	40.12	22,000	0.81	100	NA
n-hexane	65.59	390,000	0.31	700	NA
Formaldehyde	10.39	55	0.30	9.8	3.1 E-09
				Total Cancer Risk:	1.2 E-08

Table 5-11

ALTERNATIVE A INFILL DRILLING SCENARIO HAP RESULTS

Pollutant	1-hour Result (µg/m³)	REL (µg/m³)	Annual Result (µg/m³)	RfC (µg/m³)	Cancer Risk at Nuiqsut Receptor
Benzene	47.34	1,300	0.99	30	2.6 E-09
Toluene	53.24	37,000	0.64	5,000	NA
Ethylbenzene	17.01	350,000	0.18	1,000	1.5 E-10
Xylenes	27.78	22,000	0.55	100	NA
n-hexane	1,335	390,000	3.54	700	NA
Formaldehyde	1.17	55	0.046	9.8	2.2 E-10
				Total Cancer Risk:	3.0 E-09

Table 5-12

ALTERNATIVE C CONSTRUCTION SCENARIO HAP RESULTS

Pollutant	1-hour Result (µg/m³)	REL (µg/m³)	Annual Result (µg/m³)	RfC (µg/m³)	Cancer Risk at Nuiqsut Receptor
Benzene	86.33	1,300	0.73	30	4.5 E-09
Toluene	83.39	37,000	0.69	5,000	NA
Ethylbenzene	16.36	350,000	0.14	1,000	2.7 E-10
Xylenes	75.49	22,000	0.59	100	NA
n-hexane	9.11	390,000	0.075	700	NA
Formaldehyde	25.40	55	0.23	9.8	2.8 E-09
				Total Cancer Risk:	7.6 E-09

Table 5-13

ALTERNATIVE C DEVELOPMENTAL DRILLING SCENARIO HAP RESULTS

Pollutant	1-hour Result (µg/m³)	REL (µg/m³)	Annual Result (µg/m³)	RfC (µg/m³)	Cancer Risk at Nuiqsut Receptor
Benzene	410.3	1,300	1.37	30	1.2 E-08
Toluene	222.5	37,000	1.00	5,000	NA
Ethylbenzene	50.39	350,000	0.21	1,000	5.7 E-10
Xylenes	54.30	22,000	0.82	100	NA
n-hexane	29.76	390,000	0.28	700	NA
Formaldehyde	12.06	55	0.32	9.8	3.9 E-09
				Total Cancer Risk:	1.6 E-08

Table 5-14

ALTERNATIVE C INFILL DRILLING SCENARIO HAP RESULTS

Pollutant	1-hour Result (µg/m³)	REL (µg/m³)	Annual Result (µg/m³)	RfC (µg/m³)	Cancer Risk at Nuiqsut Receptor
Benzene	107.7	1,300	1.74	30	5.9 E-09
Toluene	112.3	37,000	0.98	5,000	NA
Ethylbenzene	57.02	350,000	0.26	1,000	2.9 E-10
Xylenes	101.0	22,000	0.80	100	NA
n-hexane	1,642	390,000	2.37	700	NA
Formaldehyde	2.29	55	0.051	9.8	1.0 E-09
				Total Cancer Risk:	7.2 E-09

5.4 OZONE

Review of the ozone hourly data at the Nuiqsut monitoring station shows that of the past three years, the maximum 1-hour value for ozone was 57 ppb, which is 81% of the current NAAQS (SLR, 2015; 2016; 2017). This ozone level is lower than the value presented in the GMT1 AQIA where the observed maximum 1-hour concentration for locations on the Alaskan North Slope was 73 ppb (AECOM, 2013a). The GMT1 AQIA (AECOM, 2013a) extensively discussed ozone diurnal variation, ozone trends within the Alaskan North Slope, and anthropogenic precursor emissions such as NOx, CO, and VOCs. The conclusion was reached that the Alaskan North Slope has minimal ozone diurnal variation, and only slight increases in ozone have occurred at the Barrow monitoring station indicating that Alaskan North Slope regional ozone is not highly sensitive to local increases in ozone precursor emissions. Similar to GMT1, the GMT2 Project will increase ozone precursor emissions, however emissions from the GMT2 Project and other reasonable foreseeable developments (RFDs), such as the Nanushuk Project and Mustang Pad, are also not expected to meaningfully change regional ozone levels.

5.5 SECONDARY $PM_{2.5}$

Secondary formation of $PM_{2.5}$ impacts are not in the same place and at the same time as primary $PM_{2.5}$ impacts, as secondary $PM_{2.5}$ impacts usually occur at a later time and at greater distances from the source than primary impacts because of the time required for complex chemical reactions to occur in the atmosphere. Accordingly, secondary $PM_{2.5}$ impacts are always much less than primary impacts. As detailed in Tables 5-1 through 5-6, all $PM_{2.5}$ standards in all modeling scenarios are less than the NAAQS/AAAQS under Alternative A and Alternative C.

Currently, all areas in the Alaskan North Slope are in attainment for $PM_{2.5}$. As detailed in the GMT1 AQIA (AECOM, 2013a), monitoring stations near the Beaufort and Chukchi Seas show concentrations of $PM_{2.5}$ below the background level used in the GMT2 nearfield modeling. Furthermore, the USEPA indicated that higher levels of $PM_{2.5}$ are generally noticed only on windy days and are not representative of regular conditions in the area similar to the Nuiqsut monitoring station.

NOx is also a known precursor for secondary $PM_{2.5}$. USEPA notes that in the Alaskan North Slope, actual NOx emissions from facilities near Deadhorse are on the order of magnitude of 65,000 tpy and yet primary and secondary $PM_{2.5}$ concentrations are low (AECOM, 2013a). Since the total of GMT2 Project onsite project sources, offsite project sources, and non-project cumulative sources will result in NOx emissions well below 65,000 tpy, it can be concluded that the GMT2 Project will also have minimal, if any, impacts on secondary $PM_{2.5}$ formation.

5.6 LEAD AND AMMONIA

As briefly mentioned in Sections 4.2.4, there are minimal emissions expected from the GMT2 project of ammonia or lead. The majority of onsite sources during all three modeling scenarios: Construction, Developmental Drilling, and Infill Drilling, are fueled by diesel or field natural gas. There are little to no lead concentrations in either fuel source and currently AP-42 does not have a default emission factor for diesel-fired sources for lead or ammonia. Lead from field natural gas is considered negligible also. As stated in GMT1 AQIA (AECOM, 2013a), the only potential for a lead additive would be in gasoline for piston-engine aircraft. Similar to GMT1, piston-engine aircraft used in GMT2 are not expected to use gasoline with lead additive.

Ammonia emissions are not expected from the GMT2 project. Generally, ammonia emissions from the oil and gas industry are only when selective catalytic reduction or non-catalytic reduction emission control devices are used. Some selective catalytic and non-catalytic reduction devices inject ammonia into the exhaust gas to reduce NOx emissions and subsequently, the stack exhaust may include ammonia emissions. This process is known as ammonia slip. Since no emission sources in the GMT2 project will use these types of devices, ammonia emissions are negligible to non-existent.

5.7 CONCLUSIONS

As detailed in the tables above, the GMT2 Project Alternative A potential impacts are less than NAAQS/AAAQS for all criteria pollutants and averaging periods as well as below all REL and RfC thresholds for HAPs. The GMT2 Project Alternative C potential impacts are less than NAAQS/AAAQS for all criteria pollutants and averaging periods and below all REL and RfC thresholds for HAPs. Lastly, the calculated cancer risk at the Nuiqsut community is much less than 10 in a million for all modeling scenarios in Alternatives A and C.

For all SO_2 models under each alternative, scenario, and averaging period, the maximum impacts occur near the Nanushuk Pad (NANUPAD). In Table 3-10, the short term emission rate for SO_2 for NANUPAD is 9.32 g/s which is 320 to 3,600 times higher than the total SO_2 emission rates of GMT2 onsite project sources under each alternative and scenario. This is mostly due to the gas-fired turbines and flares utilized at the Nanushuk Pad. While including these receptors in the near field modeling analysis still show impacts are less than the NAAQS/AAAQS, it is important to note the impact from the GMT2 Project is considerably lower than the results indicate. Comparing onsite GMT2 source impacts to those of cumulative and offsite GMT2 source impacts, onsite GMT2 source impacts are 6 to 174 times less.

The nearfield modeling was conducted with some conservative assumptions that could be refined in the future. Among these assumptions are the following:

- Vehicle traffic under each modeling scenario assumed an average number of trucks per month based on an annual total per activity (e.g., construction, drilling, operations, etc.). A monthly breakdown of truck traffic for each activity would yield a more representative assessment of impacts from tailpipe emissions and fugitive dust.
- Drilling, facilities installation, and well interventions were assumed to occur in the same 1-hour, 3-hour, and 24-hour period under Alternative A and Alternative C Developmental Drilling scenarios. Drilling and well interventions were assumed to occur in the same 1-hour, 3-hour, and 24-hour period under Alternative A and Alternative C Infill Drilling scenarios. Based on the nature of these operations and for safety reasons, it is not likely that these activities would occur simultaneously, and a more refined assessment of impacts could be performed.

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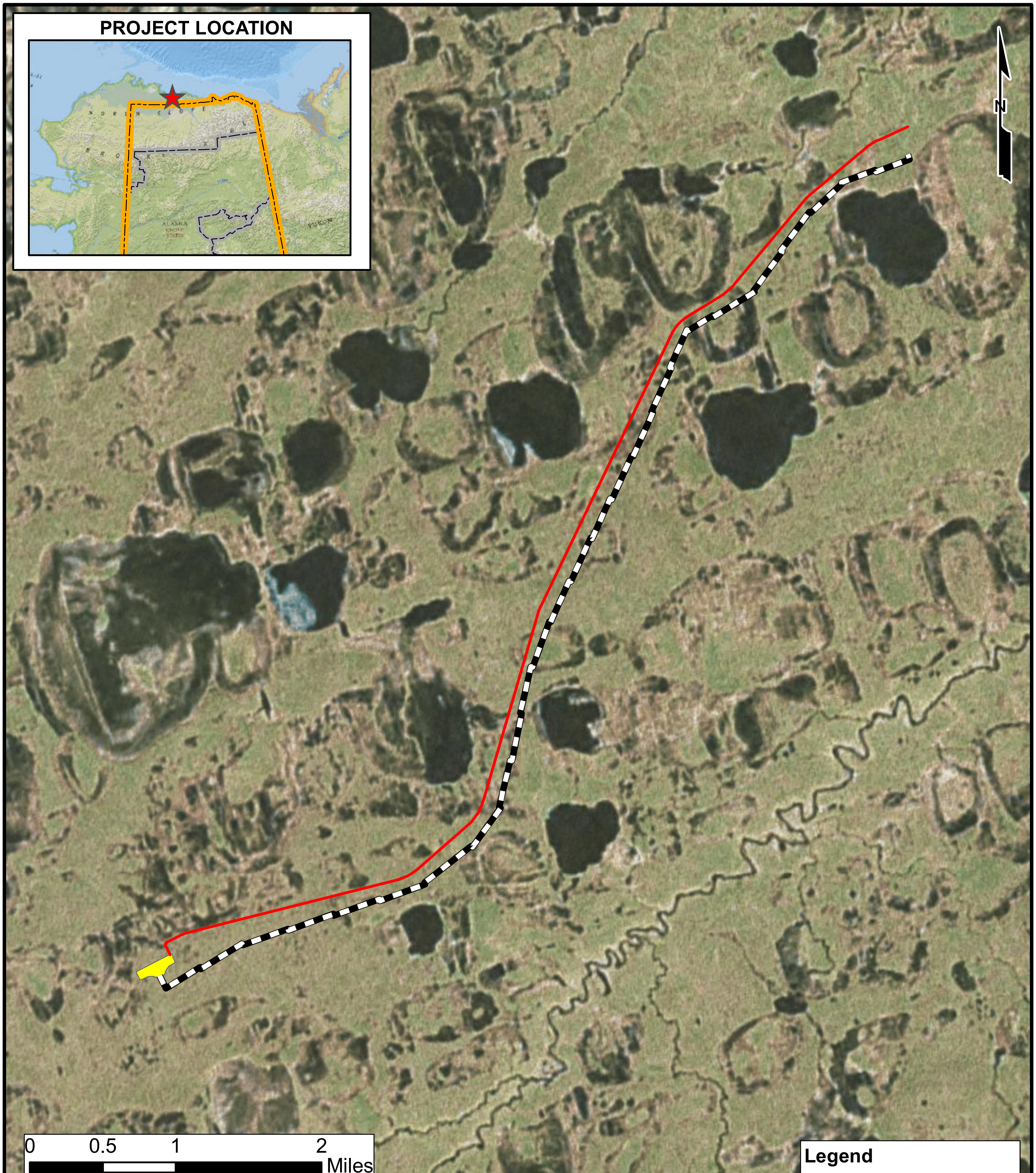
APPENDIX A
FIGURES



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DRAWN BY:	N.Peace
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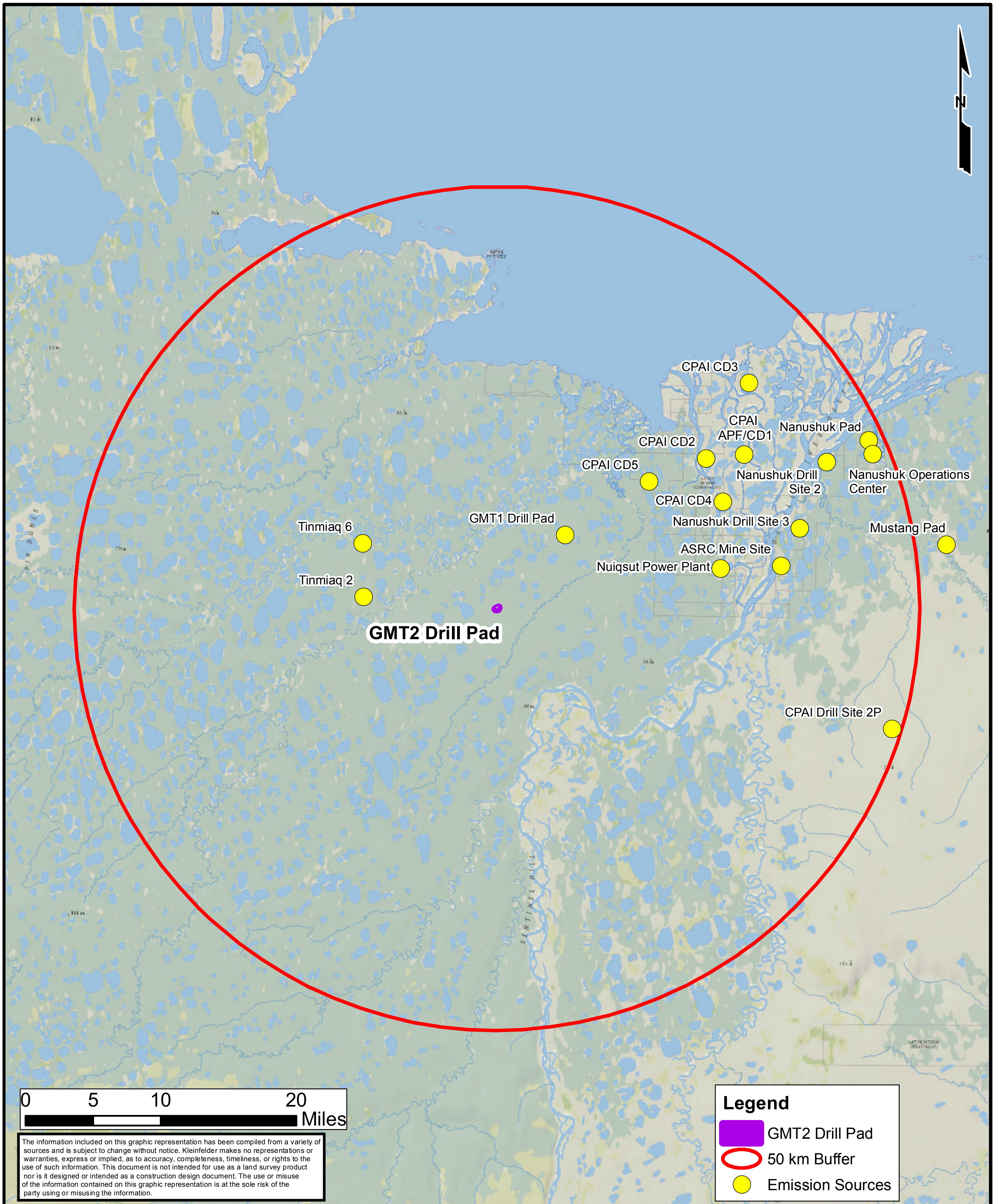
FILE NAME:	GMT2_Fig1.mxd

Proposed GMT2 Project Area

Bureau of Land Management
Greater Mooses Tooth 2 (GMT2)
National Petroleum Reserve, Alaska

FIGURE
1



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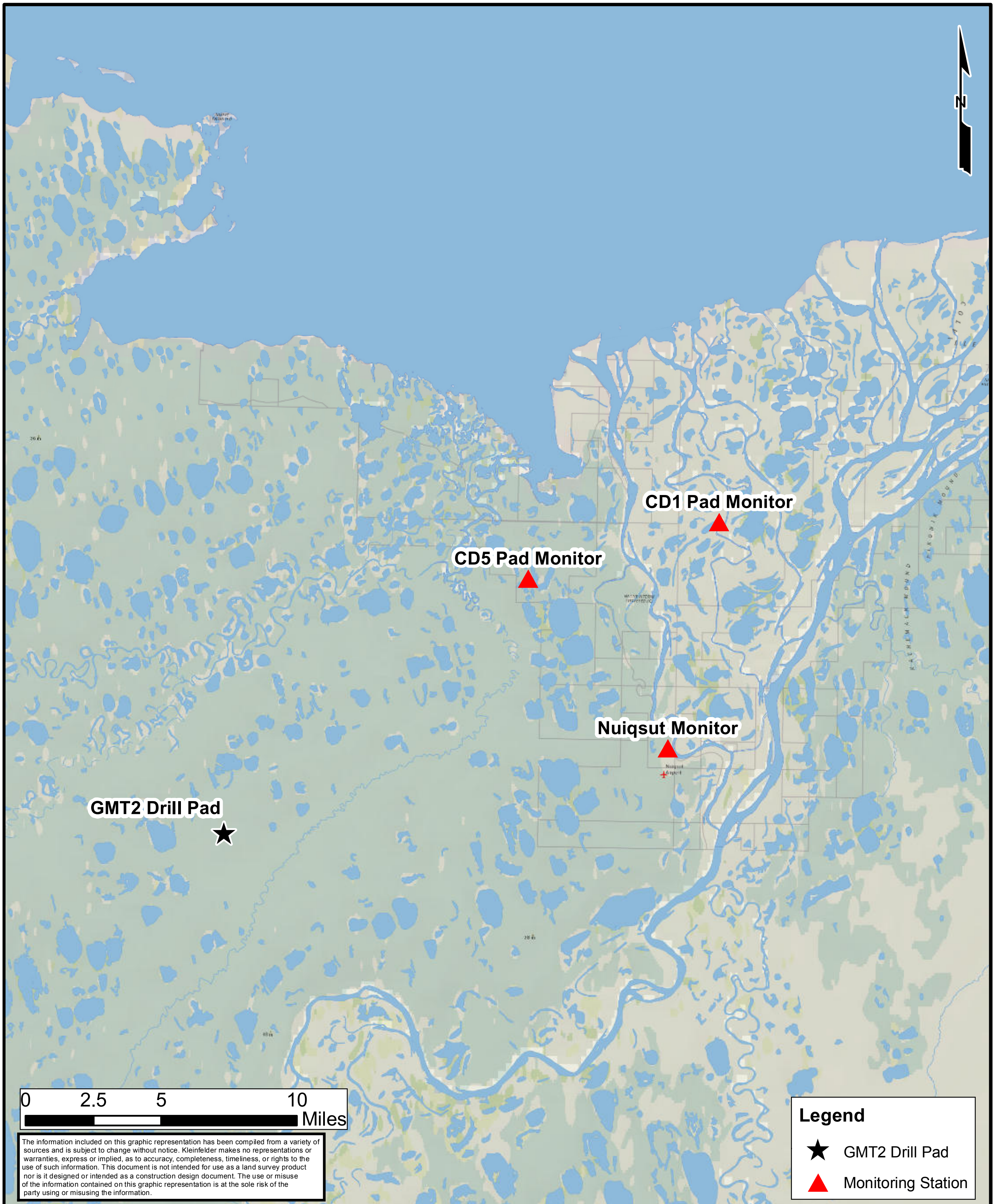
FILE NAME:	GMT2_Fig2_Rev.mxd

Cumulative Emission Sources

Bureau of Land Management
Greater Mooses Tooth 2 (GMT2)
National Petroleum Reserve, Alaska

FIGURE
2



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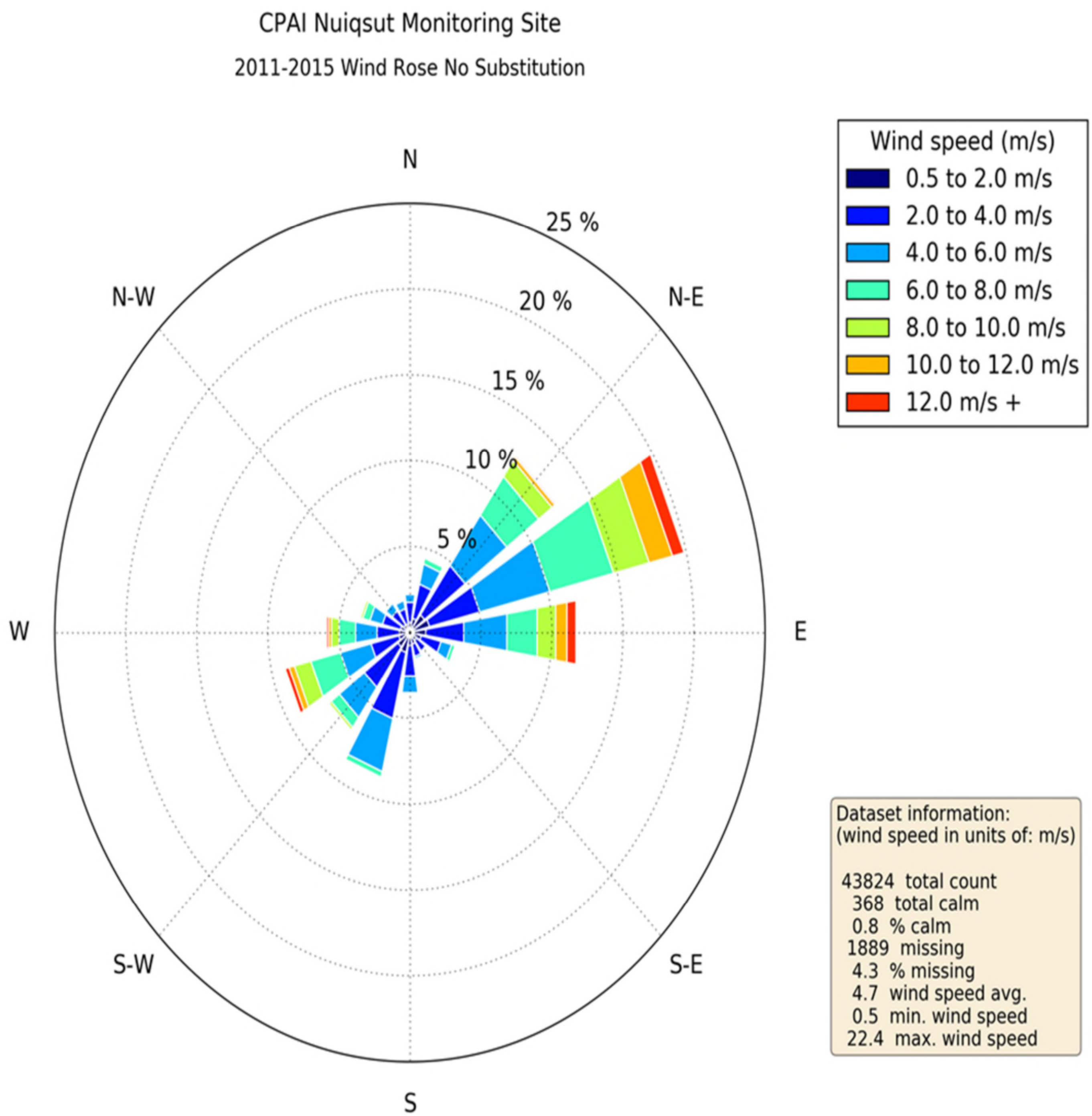
Background Air Monitoring Stations

Bureau of Land Management
Greater Mooses Tooth 2 (GMT2)
National Petroleum Reserve, Alaska

FIGURE
3



KLEINFELDER Bright People. Right Solutions. www.kleinfelder.com	PROJECT NO. 20172405 DRAWN: 7/25/2017 DRAWN BY: CHECKED BY: FILE NAME: GMT2—Figure 3.pdf	**CPAI NUIQSUT MONITORING SITE WIND ROSE** **North Slope, Alaska**	FIGURE **4**

RAMBOLL ENVIRON

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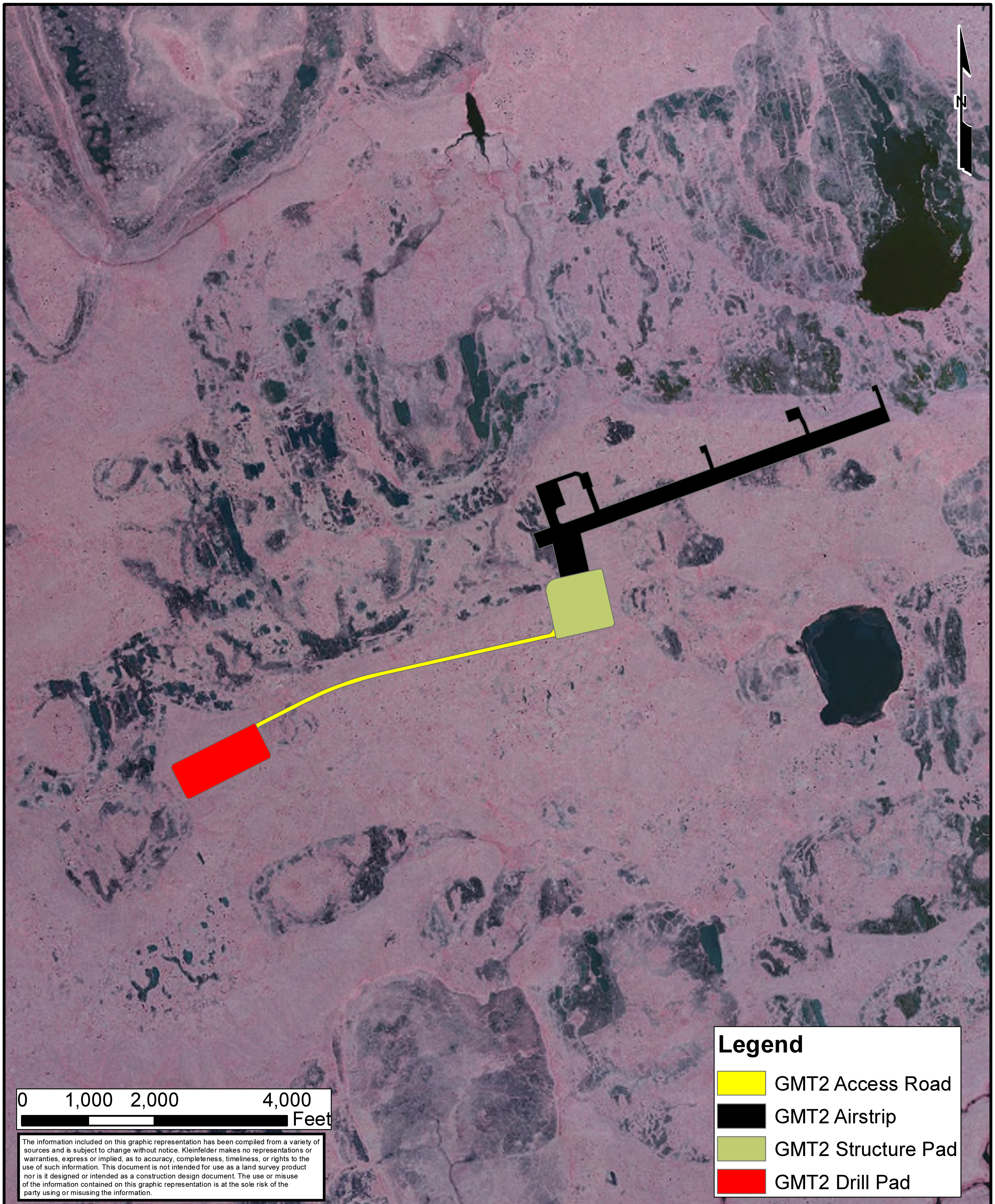
FILE NAME:	GMT2_Fig5_Rev.mxd

Alternative A and Alternative B Drill Pad and Access Road

Bureau of Land Management
Greater Mooses Tooth 2 (GMT2)
National Petroleum Reserve, Alaska

FIGURE

5



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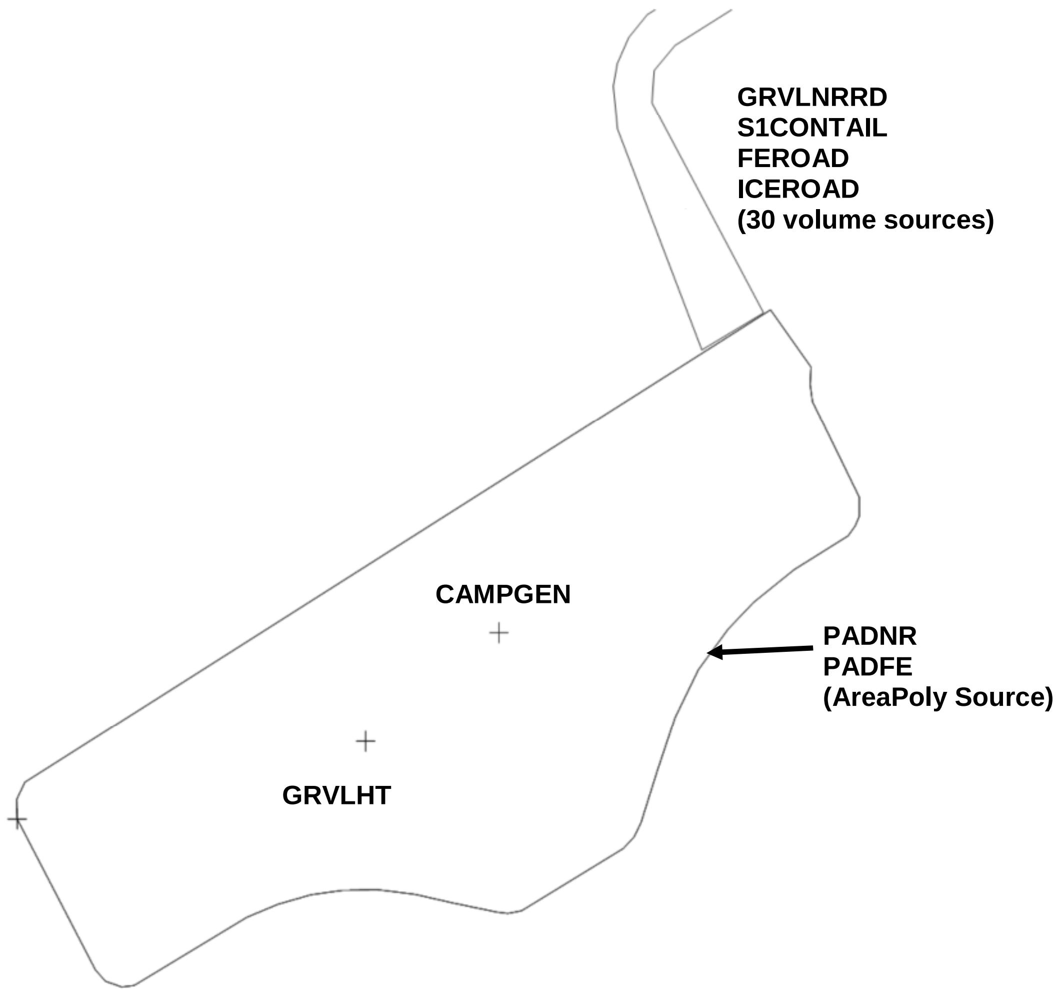
Alternative C Pads and Access Road

Bureau of Land Management
Greater Mooses Tooth 2 (GMT2)
National Petroleum Reserve, Alaska

FIGURE

6



PROJECT NO. 20172405	**GMT2 ALTERNATIVE A CONSTRUCTION SCENARIO EMISSION SOURCE LOCATION**	FIGURE
DRAWN: 7/25/2017		**7**
DRAWN BY: K.Meszaros		
CHECKED BY: D. Collins	**GMT2 Drill Pad Alternative A National Petroleum Reserve, Alaska**	
FILE NAME: Figure 97pdf		

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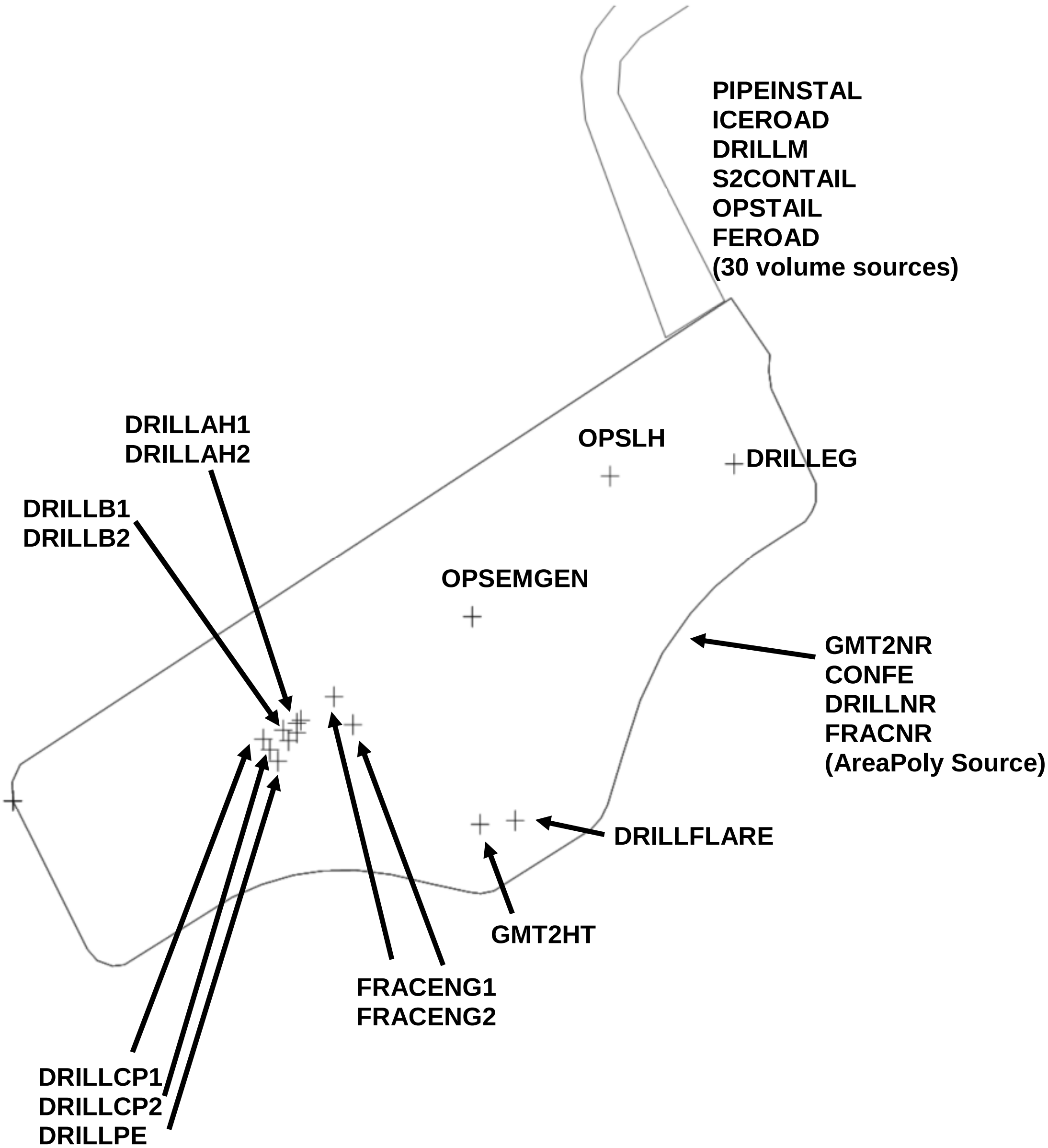

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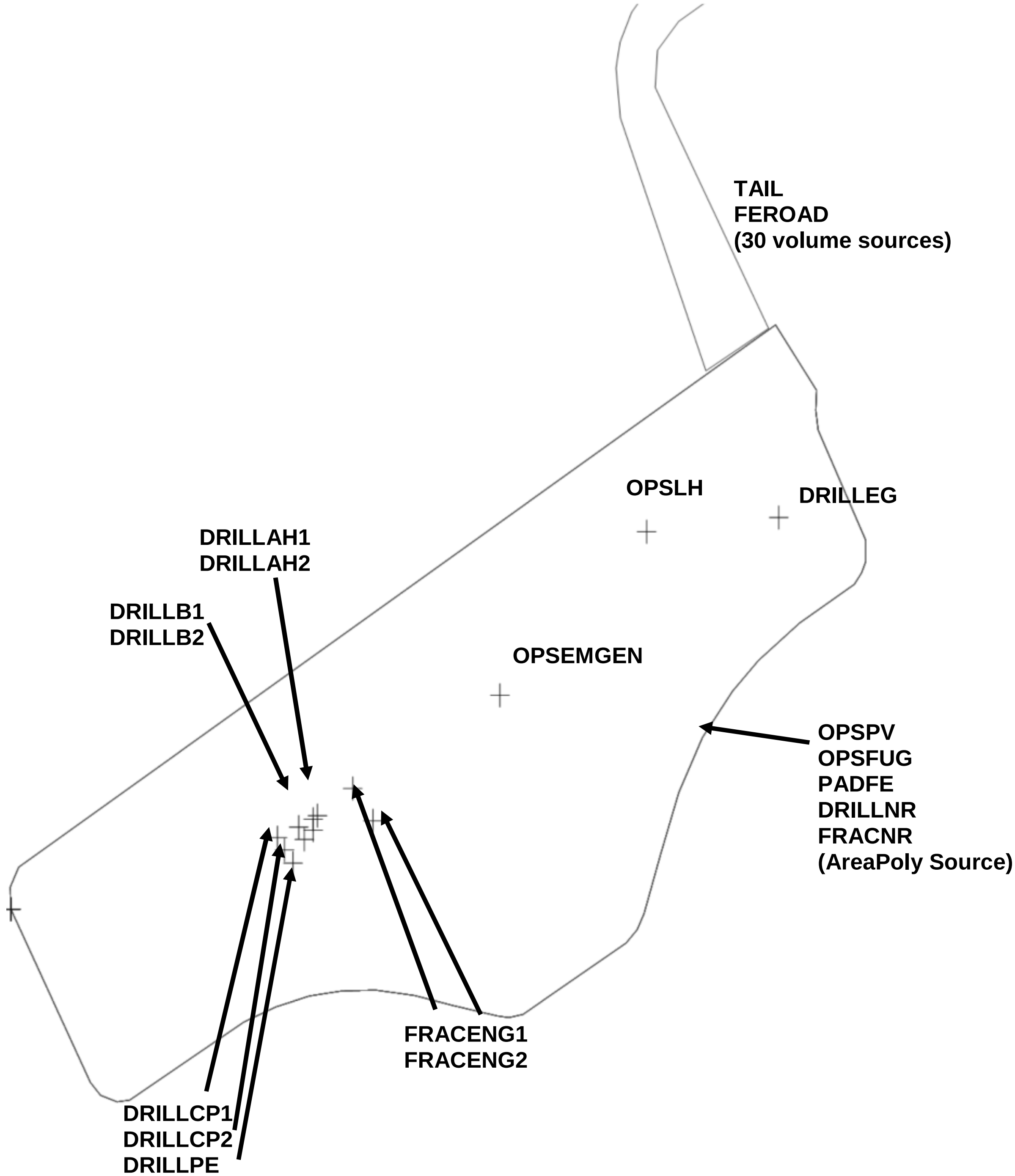
GMT2 ALTERNATIVE A
DEVELOPMENTAL DRILLING SCENARIO
EMISSION SOURCE LOCATION

GMT2 Drill Pad Alternative A
National Petroleum Reserve, Alaska

FIGURE
8



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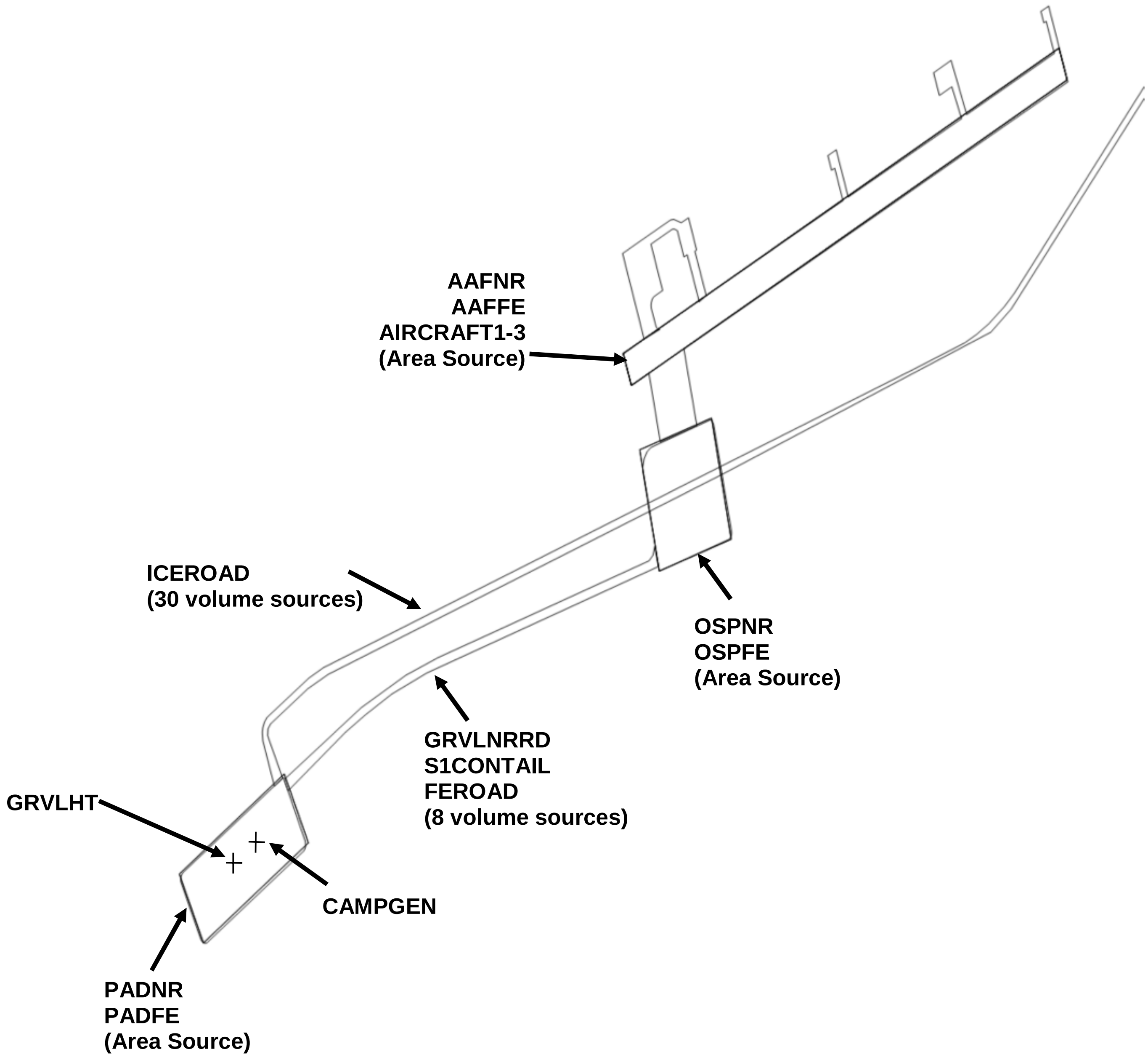
GMT2 ALTERNATIVE A
INFILL DRILLING SCENARIO
EMISSION SOURCE LOCATION

GMT2 Drill Pad Alternative A
National Petroleum Reserve, Alaska

FIGURE
9



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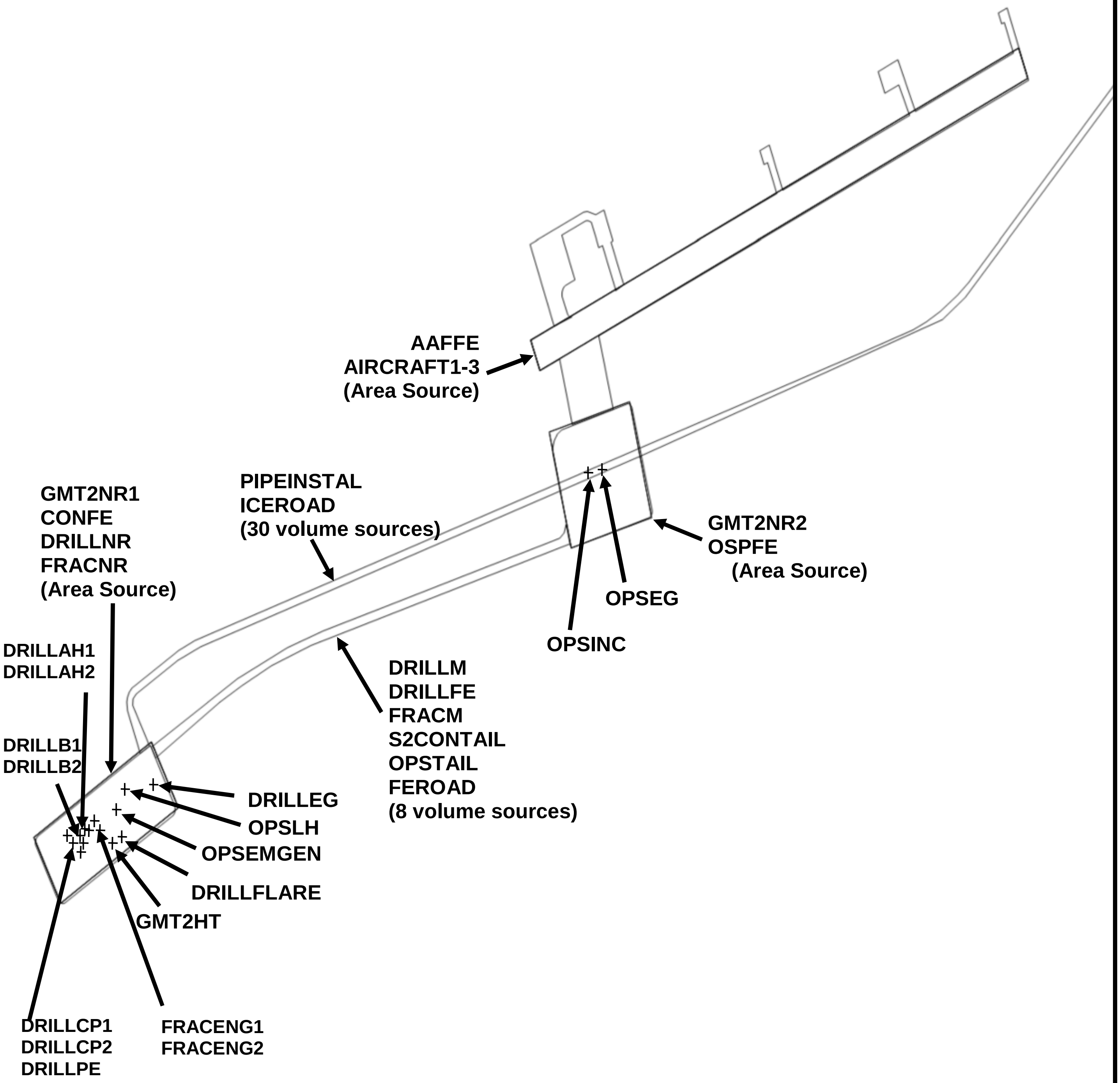
GMT2 ALTERNATIVE C
CONSTRUCTION SCENARIO
EMISSION SOURCE LOCATION

GMT2 Drill Pad Alternative C
National Petroleum Reserve, Alaska

FIGURE
10



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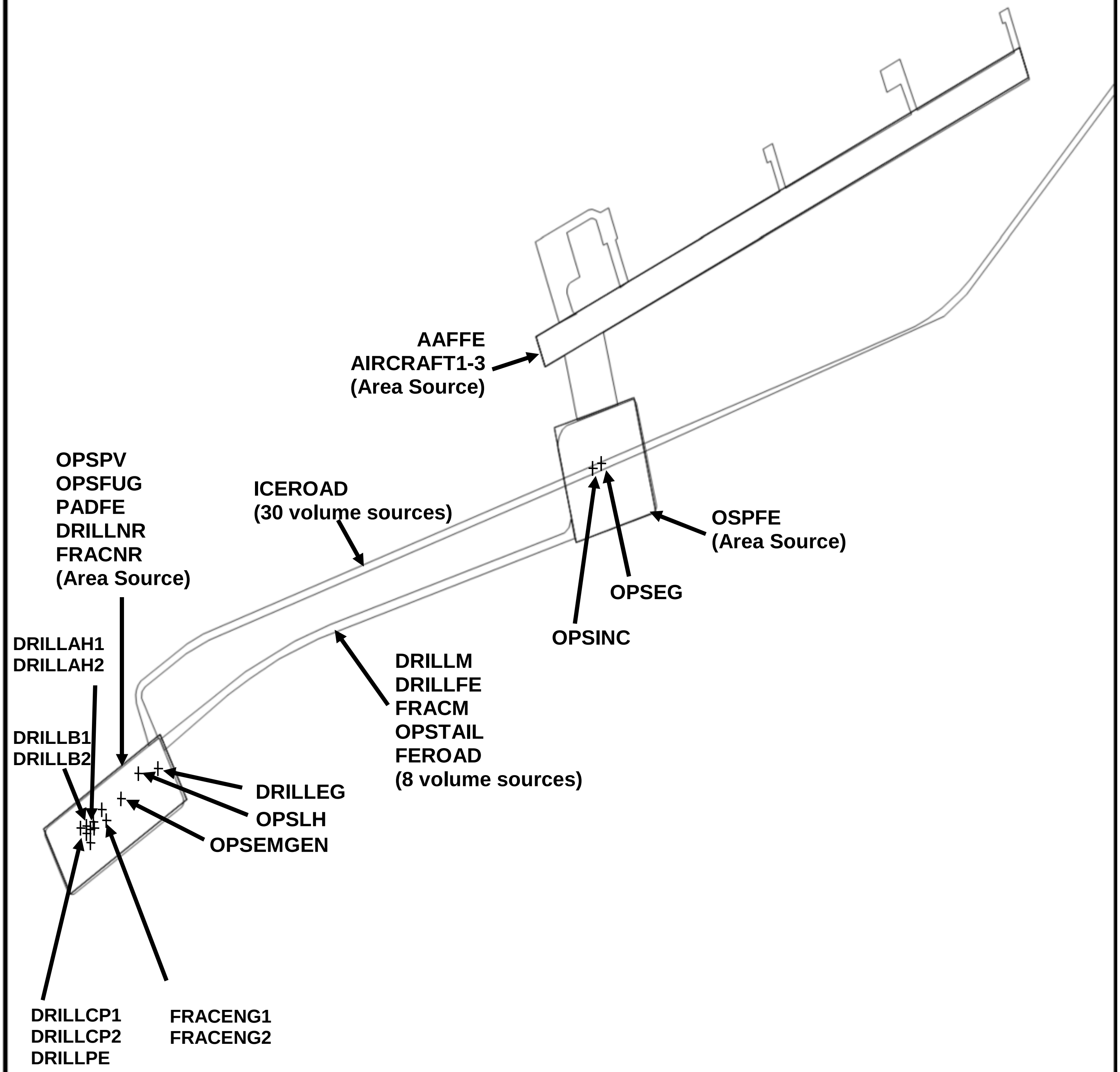
FILE NAME:	Figure 11.pdf

GMT2 ALTERNATIVE C
DEVELOPMENTAL DRILLING SCENARIO
EMISSION SOURCE LOCATION

GMT2 Drill Pad Alternative C
National Petroleum Reserve, Alaska

FIGURE
11



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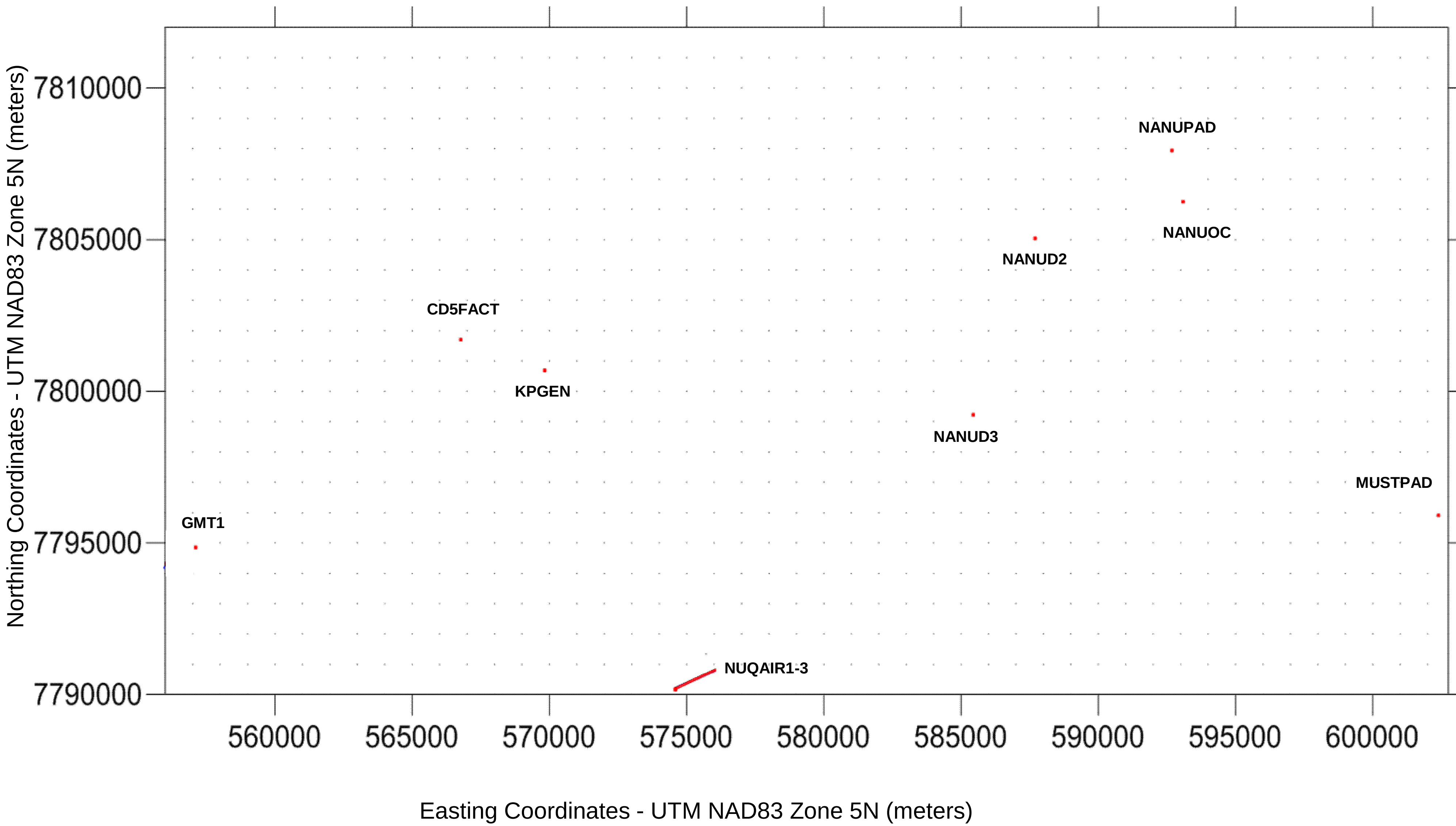
GMT2 ALTERNATIVE C
INFILL DRILLING SCENARIO
EMISSION SOURCE LOCATION

GMT2 Drill Pad Alternative C
National Petroleum Reserve, Alaska

FIGURE
12



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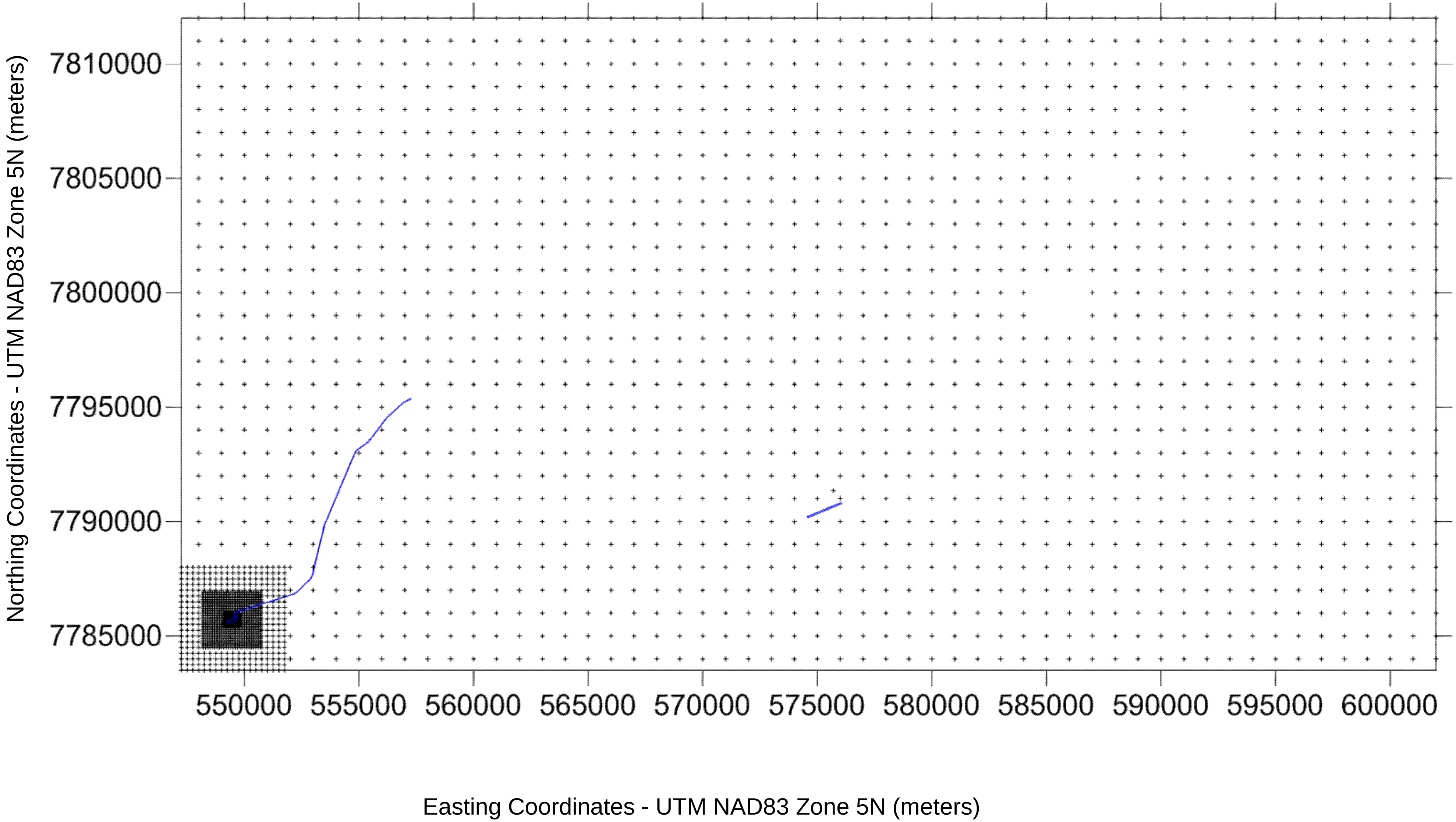
GMT2 CUMULATIVE AND OFFSITE PROJECT SOURCES OUTSIDE 2KM

GMT2 Project
National Petroleum Reserve, Alaska

FIGURE
13



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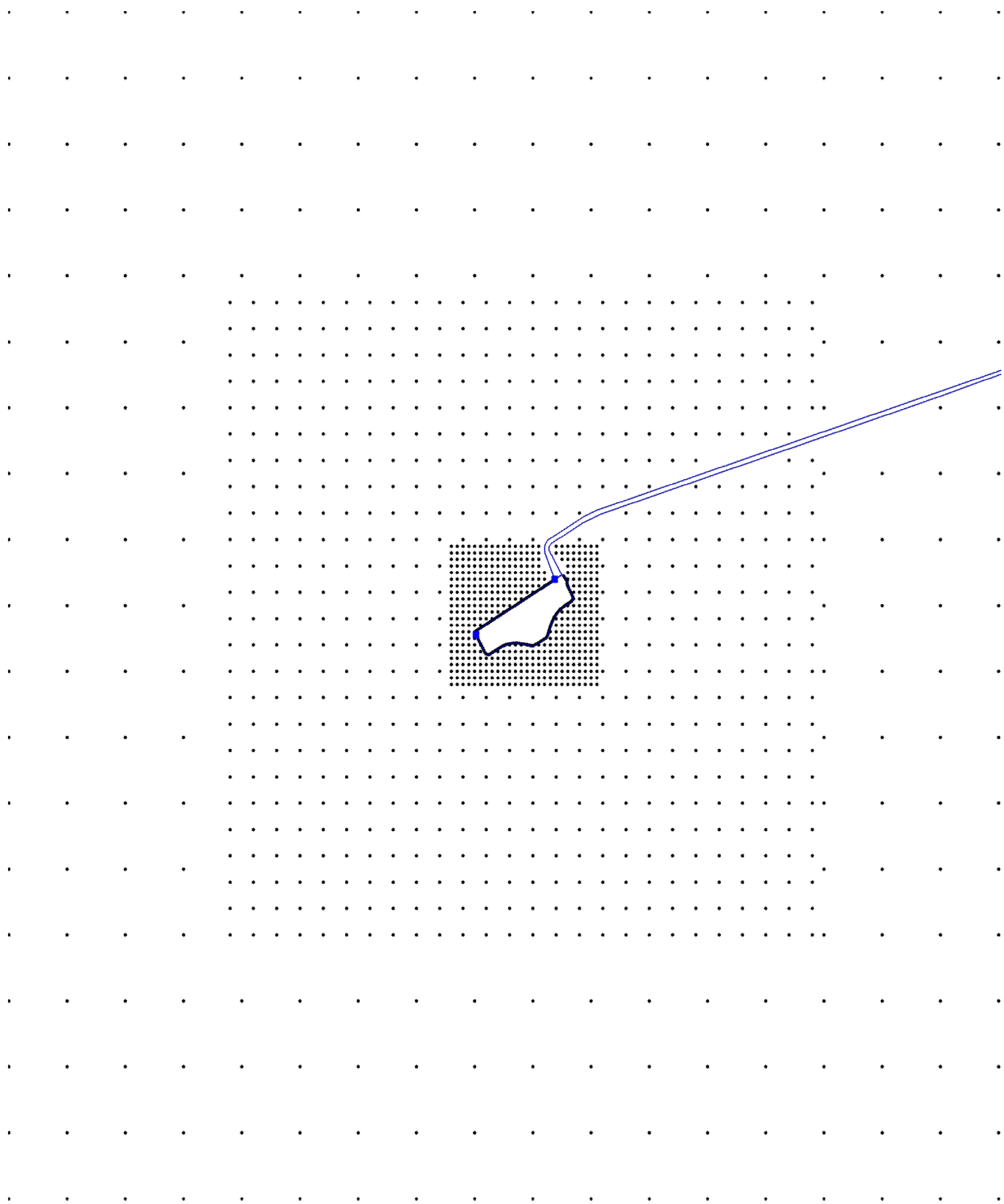
GMT2 ALTERNATIVE A
RECEPTOR GRID—50 KM RANGE

GMT2 Alternative A
National Petroleum Reserve, Alaska

FIGURE
14



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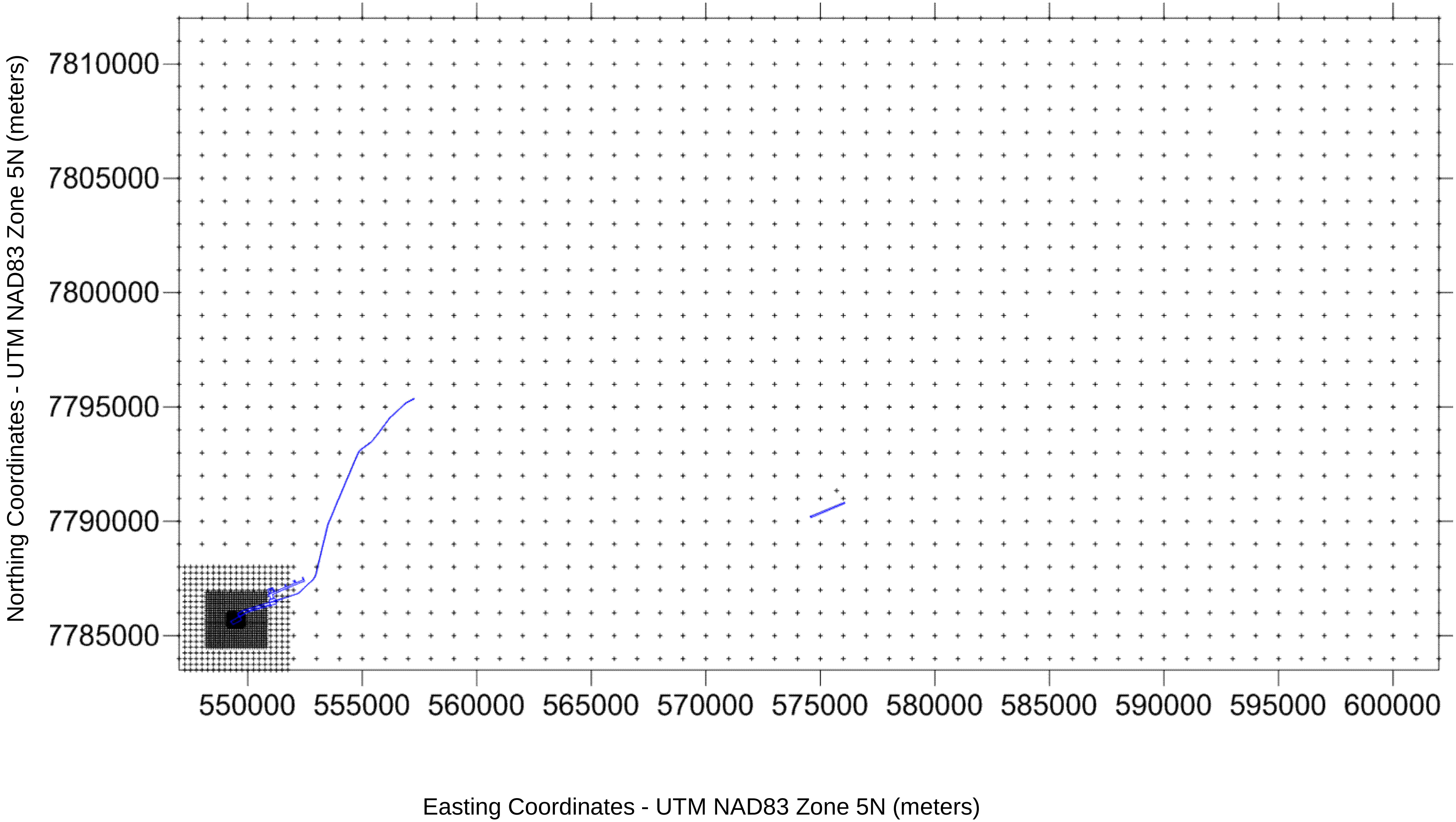
GMT2 ALTERNATIVE A
RECEPTOR GRID—2 KM RANGE

GMT2 Alternative A
National Petroleum Reserve, Alaska

FIGURE
15



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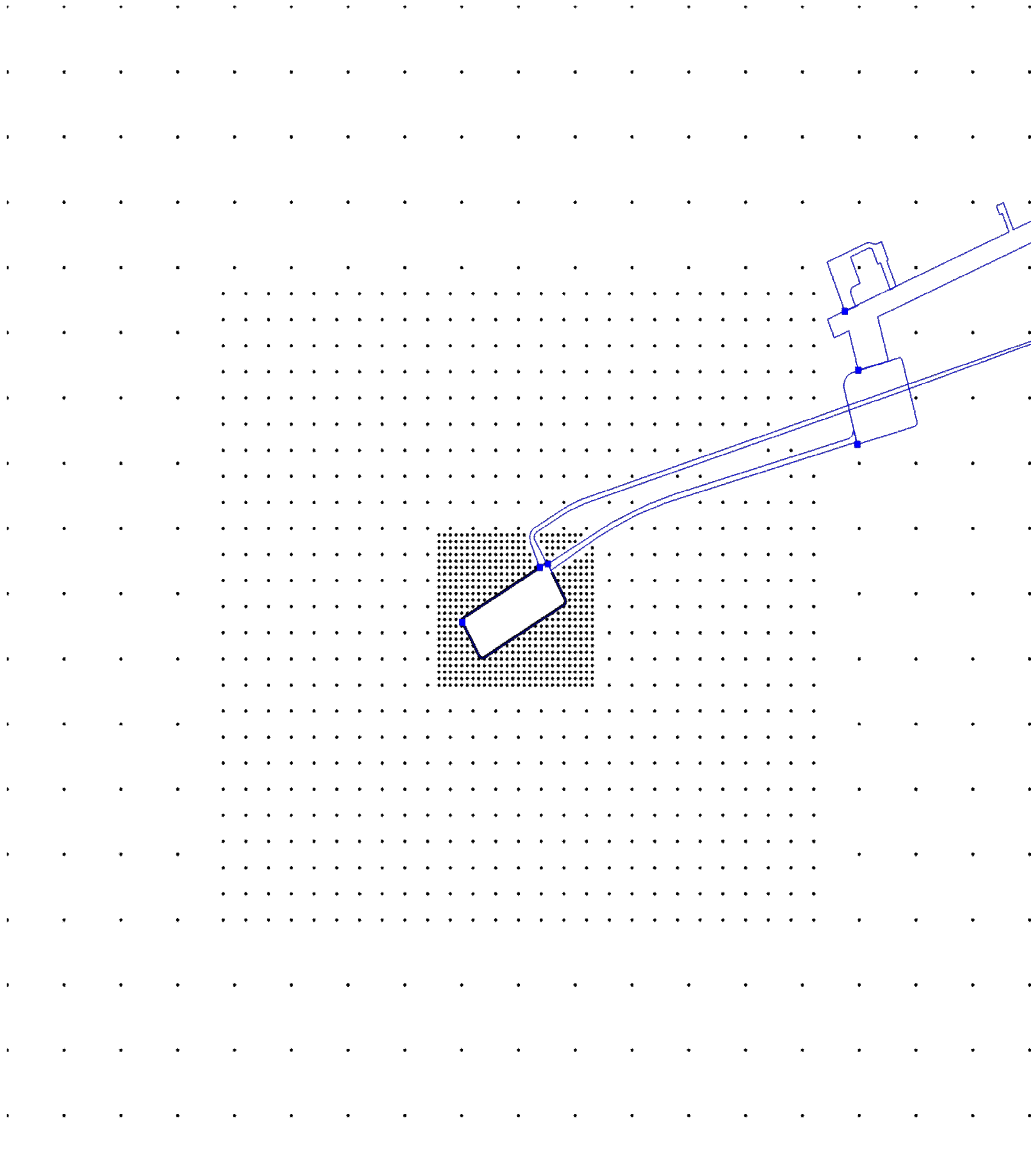
GMT2 ALTERNATIVE C RECEPTOR GRID — 50 KM RANGE

GMT2 Alternative C
National Petroleum Reserve, Alaska

FIGURE **16**



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GMT2 ALTERNATIVE C
RECEPTOR GRID —2 KM RANGE

GMT2 Alternative C
National Petroleum Reserve, Alaska

FIGURE
17

APPENDIX B

EMISSION CALCULATION SUMMARIES FOR ALTERNATIVES A AND C

Project: GMT2, Alternative A

Date: 7/28/2017

Project Emissions Summary -

General Schedule

	Year 1			Year 2												Year 3											
	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Construction																											
Construction Camp Generators	0	0	1	2	2	2	2	2	1	1	1	1	0	1	1	2	2	2	2	2	1	1	1	1	1	1	0
Aircraft Activity	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Pipeline Installation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0
Power Line Installation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0
Fiber Optic Line Installation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0
Seasonal Ice Road Construction	0	1	1	1	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0
Gravel Roads and Pad Construction	0	0	0	0	1	1	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GMT2 Facilities Installation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1
Alpine ACF and CD5 Facilities Installation Related to GMT2	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vertical Support Member (VSM) Construction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0
Season 1 Construction Mobile Support Tailpipe	0	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Season 2 Construction Mobile Support Tailpipe	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Construction Fugitive Emissions	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0
Season 1 Construction Mobile Support Dust	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Season 2 Construction Mobile Support Dust	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0
Developmental Drilling																											
Drill Rigs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
Drillling Non-Mobile Support Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
Kuukpik Supporting Pad Generators	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
Drilling Mobile Equipment Tailpipe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
Drilling Mobile Equipment Fugitive Dust	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0
Drilling Well Flowback and Flaring	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
Infill Drilling																											
Drill Rigs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Drillling Non-Mobile Support Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kuukpik Supporting Pad Generators	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Drilling Mobile Equipment Tailpipe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Drilling Mobile Equipment Fugitive Dust	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Drilling Well Flowback and Flaring	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Routine Operations																											
Line Heater	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Pigging Venting	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fugitive Components	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Emergency Generator	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Mobile Equipment Tailpipe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Mobile Equipment Fugitive Dust	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wind Erosion Fugitive Dust	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aircraft Activity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Well Interventions																											
Well Intervention Main Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Well Intervention Non-Mobile Support Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Well Intervention Moble Equipment Tailpipe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Well Intervention Moble Equipment Fugitive Dust	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0

	Year 4 - Year 10 (Routine Ops with Infill Drilling)												Year 11 - Life of Wells (Routine Operations)											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Construction																								
Construction Camp Generators	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aircraft Activity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pipeline Installation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Power Line Installation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fiber Optic Line Installation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Seasonal Ice Road Construction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gravel Roads and Pad Construction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GMT2 Facilities Installation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alpine ACF and CD5 Facilities Installation Related to GMT2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vertical Support Member (VSM) Construction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Season 1 Construction Mobile Support Tailpipe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Season 2 Construction Mobile Support Tailpipe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Construction Fugitive Emissions	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Season 1 Construction Mobile Support Dust	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Season 2 Construction Mobile Support Dust	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Developmental Drilling																								
Drill Rigs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Drillling Non-Mobile Support Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kuukpik Supporting Pad Generators	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Drilling Mobile Equipment Tailpipe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Drilling Mobile Equipment Fugitive Dust	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Drilling Well Flowback and Flaring	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Infill Drilling																								
Drill Rigs	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
Drillling Non-Mobile Support Equipment	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
Kuukpik Supporting Pad Generators	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
Drilling Mobile Equipment Tailpipe	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
Drilling Mobile Equipment Fugitive Dust	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Drilling Well Flowback and Flaring	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Routine Operations																								
Line Heater	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Pigging Venting	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Fugitive Components	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Emergency Generator	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Mobile Equipment Tailpipe	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Mobile Equipment Fugitive Dust	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0
Wind Erosion Fugitive Dust	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0
Aircraft Activity	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0
Well Interventions																								
Well Intervention Main Equipment	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Well Intervention Non-Mobile Support Equipment	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Well Intervention Moble Equipment Tailpipe	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Well Intervention Moble Equipment Fugitive Dust	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Notes:
1. Section 2.4.1 of the GMT2 Draft SEIS states that first season ice road construction is expected to begin in 4Q of Year 1 and the second season of ice road constuction is expected to beging in 4Q of Year 2. Section 2.4.5 states that ice road construction typically begins in November. Ice roads can typically be used February through April and support power generation during ice season needed January through May.
2. Section 2.4.1 of the GMT2 Draft SEIS states that gravel mining, construction of gravel roads, construction of the pads, and pipeline construction is expected to begin in 1Q of Year 2. Gravel work is expected continue through 2Q and 3Q of Year 2.
3. Section 2.4.1 of the GMT2 Draft SEIS states that GMT1 and APF/CD1 tie in work is expected to begin in 2Q of Year 2 and continue through 3Q of Year 2.
4. Section 2.4.1 of the GMT2 Draft SEIS states that the pipeline vertical supports, pipelines, and telecom cables are expected to be installed starting in 1Q of Year 3.
5. Section 2.4.1 of the GMT2 Draft SEIS states that installation of equipment of the GMT2 pad is expected to occur during 2Q and 3Q of Year 3 and Section 2.5.4.2 states it will continue through December of Year 3.
6. Section 2.4.1 of the GMT2 Draft SEIS states that construction is expected to be completed in 4Q of Year 3.
7. Section2.4.3 of the GMT2 Draft SEIS states that temporary power would be needed at the drill rig and drill camp until permanent power through the CD1/APF system can be used. The tie in to the CD1/APF system would use the pipeline supports and messenger cables.
8. Section 2.5.1 of the GMT2 Draft SEIS states that drilling is expected to begin in May of Year 3. The developmental drilling season will go from May of Year 3 through December of Year 3. Infill drilling will begin in January of Year 4 and last through Year 10 as is is expected that drilling will last 7 years.
9. Section 2.5.4.2 of the GMT2 Draft SEIS states that first oil will occur in December of Year 3.
10. Well interventions may take place during any month concurrent with the drilling schedule. However, since well interventions will only take place for 224 hours per year, the emissions were placed within a one-month time frame, so as to be conservative with monthly emissions.

KLEINFELDER

RAMBOLL ENVIRON

Project: GMT2, Alternative A

Date: 7/28/2017

Project Emissions Summary - **NOx**

	Year 1			Year 2											
	10	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Construction															
Construction Camp Generators	---	---	1.32	3.29	2.63	2.63	2.63	2.63	1.32	1.32	1.65	1.32	---	0.99	1.32
Aircraft Activity	---	0.01	0.01	0.005	0.01	0.01	0.01	0.04	0.04	0.04	0.04	0.01	---	0.01	0.01
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	---	3.95	5.27	6.59	5.27	---	---	---	---	---	---	---	---	3.95	5.27
Gravel Roads and Pad Construction	---	---	---	---	9.77	9.77	9.77	---	---	---	0.65	0.52	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	0.98	1.22	0.98	0.98	0.24	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	0.48	0.48
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]															
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]															
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations															
Line Heater	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Interventions															
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	0	5.09	7.72	11.0	18.8	13.5	14.5	5.02	3.46	3.46	3.71	2.97	0	5.43	7.07
Rolling 12 Month Sum (ton/year)												89.3	89.3	89.6	89.0

	Year 3											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Construction												
Construction Camp Generators	3.29	2.63	2.63	2.63	2.63	1.32	1.32	1.65	1.32	1.32	0.33	---
Aircraft Activity	0.003	0.01	0.01	0.01	0.03	0.04	0.03	0.03	0.01	0.01	0.01	0.01
Pipeline Installation	---	2.11	2.11	2.11	1.06	---	---	---	---	---	---	---
Power Line Installation	---	0.13	0.27	0.27	0.13	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	0.19	0.19	0.05	---	---	---	---	---	---	---
Seasonal Ice Road Construction	6.59	5.27	---	---	---	---	---	---	---	---	---	---
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	1.04	1.3	1.04	1.04	1.3	1.04	1.04	1.3	1.04
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	0.62	0.50	0.25	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Drilling Non-Mobile Support Equipment	---	---	---	---	2.59	2.59	2.59	2.59	2.59	2.59	2.59	2.59
Kuukpik Supporting Pad Generators	---	---	---	---	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
Drilling Mobile Equipment Tailpipe	---	---	---	---	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Infill Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	---	---	---	---	---	---	---	---	---	---	---	0.44
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	0.30
Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	0.005
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	19.3	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	0.73	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	0.14	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	11.0	11.1	5.94	6.73	10.6	27.91	7.73	8.32	7.71	7.71	6.98	7.13
Rolling 12 Month Sum (ton/year)	89.0	81.3	73.7	65.9	71.4	95.9	100	105	110	117	119	119

	Year 4 - Year 10 (Routine Ops with Infill Drilling)											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Construction												
Construction Camp Generators	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]												
Drill Rigs	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Drilling Non-Mobile Support Equipment	2.59	2.59	2.59	2.59	2.59	2.59	2.59	2.59	2.59	2.59	2.59	2.59
Kuukpik Supporting Pad Generators	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
Drilling Mobile Equipment Tailpipe	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Mobile Equipment Tailpipe	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	0.002	0.002	0.002	0.002	0.002	---	---	---
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	19.3	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	0.73	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	0.14	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	5.58	5.58	5.58	5.58	5.58	25.8	5.58	5.58	5.58	5.58	5.58	5.58
Rolling 12 Month Sum (ton/year)	87.2											

	Year 11 - Life of Wells (Routine Operations)											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Construction												
Construction Camp Generators	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Mobile Equipment Tailpipe	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	0.002	0.002	0.002	0.002	0.002	---	---	---
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	0.74	0.74	0.74	0.74	0.74	0.7	0.74	0.74	0.74	0.74	0.74	0.74
Rolling 12 Month Sum (ton/year)	8.9											

Project: GMT2, Alternative A

Date: 7/28/2017

Project Emissions Summary - **CO**

	Year 1			Year 2											
	10	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Construction															
Construction Camp Generators	---	---	1.15	2.88	2.30	2.30	2.30	2.30	1.15	1.15	1.44	1.15	---	0.86	1.15
Aircraft Activity	---	0.02	0.02	0.01	0.02	0.02	0.02	0.05	0.06	0.05	0.06	0.02	---	0.02	0.02
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	---	1.27	1.69	2.11	1.69	---	---	---	---	---	---	---	---	1.27	1.69
Gravel Roads and Pad Construction	---	---	---	---	3.80	3.80	3.80	---	---	---	0.23	0.18	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	0.51	0.64	0.51	0.51	0.13	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	0.25	0.25
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]															
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]															
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations															
Line Heater	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Interventions															
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	0	1.81	3.38	5.52	8.33	6.64	7.15	3.52	2.24	2.24	2.38	1.88	0	2.40	3.11
Rolling 12 Month Sum (ton/year)												45.1	45.1	45.7	45.4

	Year 3											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Construction												
Construction Camp Generators	2.88	2.30	2.30	2.30	2.30	1.15	1.15	1.44	1.15	1.15	0.29	---
Aircraft Activity	0.01	0.02	0.02	0.02	0.05	0.05	0.05	0.05	0.02	0.02	0.02	0.02
Pipeline Installation	---	0.67	0.67	0.67	0.34	---	---	---	---	---	---	---
Power Line Installation	---	0.06	0.11	0.11	0.06	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	0.08	0.08	0.02	---	---	---	---	---	---	---
Seasonal Ice Road Construction	2.11	1.69	---	---	---	---	---	---	---	---	---	---
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	0.55	0.68	0.55	0.55	0.68	0.55	0.55	0.68	0.55
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	0.22	0.17	0.09	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58
Drilling Non-Mobile Support Equipment	---	---	---	---	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20
Kuukpik Supporting Pad Generators	---	---	---	---	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Drilling Mobile Equipment Tailpipe	---	---	---	---	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
Infill Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	---	---	---	---	---	---	---	---	---	---	---	0.37
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	0.16
Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	0.005
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	10.6	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	0.6	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	0.07	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	5.47	5.16	3.53	3.99	7.63	17.16	5.94	6.36	5.90	5.90	5.17	5.28
Rolling 12 Month Sum (ton/year)	45.4	42.2	39.1	35.9	40	55.0	58.6	62.6	66.7	72.6	75.3	77.5

	Year 4 - Year 10 (Routine Ops with Infill Drilling)											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Construction												
Construction Camp Generators	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]												
Drill Rigs	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58
Drilling Non-Mobile Support Equipment	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20
Kuukpik Supporting Pad Generators	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Drilling Mobile Equipment Tailpipe	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
Mobile Equipment Tailpipe	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	0.002	0.002	0.002	0.002	0.002	---	---	---
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	10.6	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	0.6	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	0.07	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	4.38	4.38	4.38	4.38	4.38	15.6	4.38	4.38	4.38	4.38	4.38	4.38
Rolling 12 Month Sum (ton/year)	63.7											

	Year 11 - Life of Wells (Routine Operations)											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Construction												
Construction Camp Generators	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
Mobile Equipment Tailpipe	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	0.002	0.002	0.002	0.002	0.002	---	---	---
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	0.54	0.54	0.54	0.54	0.54	0.5	0.54	0.54	0.54	0.54	0.54	0.54
Rolling 12 Month Sum (ton/year)	6.4											

Project: GMT2, Alternative A

Date: 7/28/2017

Project Emissions Summary - **VOC**

	Year 1			Year 2											
	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Construction															
Construction Camp Generators	---	---	0.50	1.26	1.01	1.01	1.01	1.01	0.50	0.50	0.63	0.50	---	0.38	0.50
Aircraft Activity	---	0.01	0.01	0.004	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	---	0.01	0.01
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	---	0.32	0.43	0.54	0.43	---	---	---	---	---	---	---	---	0.32	0.43
Gravel Roads and Pad Construction	---	---	---	---	0.93	0.93	0.93	---	---	---	0.10	0.08	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	0.11	0.14	0.11	0.11	0.03	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	0.07	0.07
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]															
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]															
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations															
Line Heater	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Interventions															
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	0	0.49	1.10	1.96	2.54	2.11	2.22	1.31	0.78	0.78	0.92	0.75	0	0.78	1.01
Rolling 12 Month Sum (ton/year)												14.9	14.9	15.2	15.1

	Year 3											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	1.26	1.01	1.01	1.01	1.01	0.50	0.50	0.63	0.50	0.50	0.13	---
Aircraft Activity	0.004	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Pipeline Installation	---	0.21	0.21	0.21	0.10	---	---	---	---	---	---	---
Power Line Installation	---	0.01	0.03	0.03	0.01	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	0.02	0.02	0.004	---	---	---	---	---	---	---
Seasonal Ice Road Construction	0.54	0.43	---	---	---	---	---	---	---	---	---	---
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	0.12	0.15	0.12	0.12	0.15	0.12	0.12	0.15	0.12
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	0.06	0.04	0.02	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
Drilling Non-Mobile Support Equipment	---	---	---	---	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37
Kuukpik Supporting Pad Generators	---	---	---	---	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Drilling Mobile Equipment Tailpipe	---	---	---	---	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28
Infill Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	---	---	---	---	---	---	---	---	---	---	---	0.02
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	0.62
Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	0.02
Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	0.001
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	1.21	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	0.09	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	0.02	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	1.92	1.78	1.36	1.45	2.21	2.88	1.56	1.71	1.56	1.56	1.21	1.71
Rolling 12 Month Sum (ton/year)	15.1	14.3	13.6	12.8	13.7	15.8	16.6	17.4	18.2	19.8	20.2	20.9

	Year 4 - Year 10 (Routine Ops with Infill Drilling)											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]												
Drill Rigs	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
Drilling Non-Mobile Support Equipment	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37
Kuukpik Supporting Pad Generators	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Drilling Mobile Equipment Tailpipe	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Pigging Venting	---	---	---	---	---	0.04	---	---	---	---	---	---
Fugitive Components	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62
Emergency Generator	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Mobile Equipment Tailpipe	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	0.0001	0.0001	0.0001	0.0001	0.0001	---	---	---
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	1.21	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	0.09	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	0.02	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	1.24	1.24	1.24	1.24	1.24	2.6	1.24	1.24	1.24	1.24	1.24	1.24
Rolling 12 Month Sum (ton/year)	16.2											

	Year 11 - Life of Wells (Routine Operations)											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Pigging Venting	---	---	---	---	---	0.04	---	---	---	---	---	---
Fugitive Components	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62
Emergency Generator	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Mobile Equipment Tailpipe	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	0.0001	0.0001	0.0001	0.0001	0.0001	---	---	---
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	0.66	0.66	0.66	0.66	0.66	0.7	0.66	0.66	0.66	0.66	0.66	0.66
Rolling 12 Month Sum (ton/year)	7.95											

Project: GMT2, Alternative A

Date: 7/28/2017

Project Emissions Summary - **PM10**

	Year 1			Year 2											
	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Construction															
Construction Camp Generators	---	---	0.07	0.16	0.13	0.13	0.13	0.13	0.07	0.07	0.08	0.07	---	0.05	0.07
Aircraft Activity	---	7E-04	7E-04	4E-04	7E-04	7E-04	7E-04	7E-04	7E-04	1E-03	1E-03	7E-04	---	7E-04	7E-04
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	---	0.17	0.23	0.29	0.23	---	---	---	---	---	---	---	---	0.17	0.23
Gravel Roads and Pad Construction	---	---	---	---	0.59	0.59	0.59	---	---	---	0.04	0.03	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	0.09	0.12	0.09	0.09	0.02	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	0.06	0.06
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	0.83	0.83	0.83	0.83	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	46.0	46.0	46.0	46.0	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]															
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]															
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations															
Line Heater	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Interventions															
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	0	0.31	0.44	0.59	1.09	0.86	0.96	0.39	47.1	47.1	47.1	47.1	0	0.28	0.35
Rolling 12 Month Sum (ton/year)												193	193	193	193

	Year 3											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	0.16	0.13	0.13	0.13	0.13	0.07	0.07	0.08	0.07	0.07	0.02	---
Aircraft Activity	4E-04	7E-04	7E-04	7E-04	7E-04	7E-04	1E-03	1E-03	7E-04	7E-04	7E-04	7E-04
Pipeline Installation	---	0.12	0.12	0.12	0.06	---	---	---	---	---	---	---
Power Line Installation	---	0.01	0.02	0.02	0.01	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	0.02	0.02	0.004	---	---	---	---	---	---	---
Seasonal Ice Road Construction	0.29	0.23	---	---	---	---	---	---	---	---	---	---
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	0.1	0.13	0.1	0.1	0.13	0.1	0.1	0.13	0.1
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	0.03	0.03	0.01	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Construction Fugitive Emissions	---	---	---	---	---	0.83	0.83	0.83	0.83	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	14.1	14.1	14.1	14.1	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Drilling Non-Mobile Support Equipment	---	---	---	---	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
Kuukpik Supporting Pad Generators	---	---	---	---	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Drilling Mobile Equipment Tailpipe	---	---	---	---	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	9.87	9.87	9.87	9.87	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	0	0	0	0	0	0	0	0
Infill Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	---	---	---	---	---	---	---	---	---	---	---	0.03
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	0.01
Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	5E-04
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	0.62	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	0.05	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	0.02	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	9.7	---	---	---	---	---	---
Total (ton/month) all activities	0.54	0.58	0.37	0.45	0.75	35.8	25.4	25.4	25.4	0.58	0.56	0.56
Rolling 12 Month Sum (ton/year)	193	192	192	191	192	180	159	137	115	116	116	116

	Year 4 - Year 10 (Routine Ops with Infill Drilling)											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]												
Drill Rigs	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Drilling Non-Mobile Support Equipment	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
Kuukpik Supporting Pad Generators	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Drilling Mobile Equipment Tailpipe	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	9.70	9.70	9.70	9.70	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Mobile Equipment Tailpipe	5E-04	5E-04	5E-04	5E-04	5E-04	5E-04	5E-04	5E-04	5E-04	5E-04	5E-04	5E-04
Mobile Equipment Fugitive Dust	---	---	---	---	---	0.37	0.37	0.37	0.37	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	0.83	0.83	0.83	0.83	---	---	---
Aircraft Activity	---	---	---	---	0	0	0	0	0	---	---	---
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	0.62	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	0.05	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	0.02	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	9.7	---	---	---	---	---	---
Total (ton/month) all activities	0.4	0.4	0.4	0.4	0.4	21.7	11.3	11.3	11.3	0.4	0.4	0.4
Rolling 12 Month Sum (ton/year)	58.8											

	Year 11 - Life of Wells (Routine Operations)											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Mobile Equipment Tailpipe	5E-04	5E-04	5E-04	5E-04	5E-04	5E-04	5E-04	5E-04	5E-04	5E-04	5E-04	5E-04
Mobile Equipment Fugitive Dust	---	---	---	---	---	0.37	0.37	0.37	0.37	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	0.83	0.83	0.83	0.83	---	---	---
Aircraft Activity	---	---	---	---	0	0	0	0	0	---	---	---
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	0.04	0.04	0.04	0.04	0.04	1.24	1.24	1.24	1.24	0.04	0.04	0.04
Rolling 12 Month Sum (ton/year)	5.3											

Project: GMT2, Alternative A

Date: 7/28/2017

Project Emissions Summary - **PM2.5**

	Year 1			Year 2											
	10	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Construction															
Construction Camp Generators	---	---	0.07	0.16	0.13	0.13	0.13	0.13	0.07	0.07	0.08	0.07	---	0.05	0.07
Aircraft Activity	---	7E-04	7E-04	4E-04	7E-04	7E-04	7E-04	7E-04	7E-04	1E-03	1E-03	7E-04	---	7E-04	7E-04
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	---	0.17	0.22	0.28	0.22	---	---	---	---	---	---	---	---	0.17	0.22
Gravel Roads and Pad Construction	---	---	---	---	0.57	0.57	0.57	---	---	---	0.04	0.03	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	0.09	0.11	0.09	0.09	0.02	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	0.03	0.03
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	0.13	0.13	0.13	0.13	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	4.60	4.60	4.60	4.60	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]															
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]															
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations															
Line Heater	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Interventions															
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	0	0.23	0.35	0.51	0.99	0.77	0.85	0.31	4.95	4.95	4.94	4.89	0	0.24	0.32
Rolling 12 Month Sum (ton/year)												23.7	23.7	23.7	23.7

	Year 3											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Construction												
Construction Camp Generators	0.16	0.13	0.13	0.13	0.13	0.07	0.07	0.08	0.07	0.07	0.02	---
Aircraft Activity	4E-04	7E-04	7E-04	7E-04	7E-04	7E-04	1E-03	1E-03	7E-04	7E-04	7E-04	7E-04
Pipeline Installation	---	0.12	0.12	0.12	0.06	---	---	---	---	---	---	---
Power Line Installation	---	0.01	0.02	0.02	0.01	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	0.02	0.02	0.004	---	---	---	---	---	---	---
Seasonal Ice Road Construction	0.28	0.22	---	---	---	---	---	---	---	---	---	---
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	0.1	0.12	0.1	0.1	0.12	0.1	0.1	0.12	0.1
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	0.03	0.03	0.01	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Construction Fugitive Emissions	---	---	---	---	---	0.13	0.13	0.13	0.13	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	1.41	1.41	1.41	1.41	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
Drilling Non-Mobile Support Equipment	---	---	---	---	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Kuukpik Supporting Pad Generators	---	---	---	---	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Drilling Mobile Equipment Tailpipe	---	---	---	---	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	0.99	0.99	0.99	0.99	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	0	0	0	0	0	0	0	0
Infill Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	---	---	---	---	---	---	---	---	---	---	---	0.03
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	0.01
Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	2.E-04
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	0.61	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	0.05	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	0.01	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	0.97	---	---	---	---	---	---
Total (ton/month) all activities	0.50	0.54	0.33	0.41	0.68	4.68	3.04	3.08	3.04	0.52	0.49	0.49
Rolling 12 Month Sum (ton/year)	23.7	23.3	22.8	22.4	22.7	22.5	20.6	18.7	16.9	17.4	17.6	17.8

	Year 4 - Year 10 (Routine Ops with Infill Drilling)											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Construction												
Construction Camp Generators	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]												
Drill Rigs	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
Drilling Non-Mobile Support Equipment	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Kuukpik Supporting Pad Generators	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Drilling Mobile Equipment Tailpipe	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	0.97	0.97	0.97	0.97	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Mobile Equipment Tailpipe	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04
Mobile Equipment Fugitive Dust	---	---	---	---	---	0.04	0.04	0.04	0.04	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	0.13	0.13	0.13	0.13	---	---	---
Aircraft Activity	---	---	---	---	0	0	0	0	0	---	---	---
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	0.61	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	0.05	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	0.01	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	0.97	---	---	---	---	---	---
Total (ton/month) all activities	0.37	0.37	0.37	0.37	0.37	3.15	1.51	1.51	1.51	0.37	0.37	0.37
Rolling 12 Month Sum (ton/year)	10.63											

	Year 11 - Life of Wells (Routine Operations)											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Construction												
Construction Camp Generators	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Mobile Equipment Tailpipe	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04
Mobile Equipment Fugitive Dust	---	---	---	---	---	0.04	0.04	0.04	0.04	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	0.13	0.13	0.13	0.13	---	---	---
Aircraft Activity	---	---	---	---	0	0	0	0	0	---	---	---
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	0.04	0.04	0.04	0.04	0.04	0.21	0.21	0.21	0.21	0.04	0.04	0.04
Rolling 12 Month Sum (ton/year)	1.15											

Project: GMT2, Alternative A

Date: 7/28/2017

Project Emissions Summary - **SO2**

	Year 1			Year 2											
	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Construction															
Construction Camp Generators	---	---	1.E-03	3.E-03	2.E-03	2.E-03	2.E-03	2.E-03	1.E-03	1.E-03	2.E-03	1.E-03	---	9.E-04	1.E-03
Aircraft Activity	---	2.E-03	2.E-03	8.E-04	2.E-03	2.E-03	2.E-03	8.E-03	9.E-03	8.E-03	8.E-03	2.E-03	---	2.E-03	2.E-03
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	---	4.E-03	5.E-03	7.E-03	5.E-03	---	---	---	---	---	---	---	---	4.E-03	5.E-03
Gravel Roads and Pad Construction	---	---	---	---	2.E-02	2.E-02	2.E-02	---	---	---	2.E-03	1.E-03	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	3.E-03	4.E-03	3.E-03	3.E-03	8.E-04	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	1.E-03	1.E-03
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]															
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]															
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations															
Line Heater	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Interventions															
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	0	0.01	0.01	0.01	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.01	0	0.01	0.01
Rolling 12 Month Sum (ton/year)												0.19	0.19	0.19	0.19

	Year 3											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	3.E-03	2.E-03	2.E-03	2.E-03	2.E-03	1.E-03	1.E-03	2.E-03	1.E-03	1.E-03	3.E-04	---
Aircraft Activity	8.E-04	2.E-03	2.E-03	2.E-03	8.E-03	9.E-03	8.E-03	8.E-03	2.E-03	2.E-03	2.E-03	2.E-03
Pipeline Installation	---	4.E-03	4.E-03	4.E-03	2.E-03	---	---	---	---	---	---	---
Power Line Installation	---	5.E-04	9.E-04	9.E-04	5.E-04	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	8.E-04	8.E-04	2.E-04	---	---	---	---	---	---	---
Seasonal Ice Road Construction	7.E-03	5.E-03	---	---	---	---	---	---	---	---	---	---
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	3.E-03	4.E-03	3.E-03	3.E-03	4.E-03	3.E-03	3.E-03	4.E-03	3.E-03
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	7.E-04	6.E-04	3.E-04	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02
Drilling Non-Mobile Support Equipment	---	---	---	---	6.E-03	6.E-03	6.E-03	6.E-03	6.E-03	6.E-03	6.E-03	6.E-03
Kuukpik Supporting Pad Generators	---	---	---	---	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03
Drilling Mobile Equipment Tailpipe	---	---	---	---	4.E-04	4.E-04	4.E-04	4.E-04	4.E-04	4.E-04	4.E-04	4.E-04
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03
Infill Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	---	---	---	---	---	---	---	---	---	---	---	2.E-02
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	7E-04
Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	2.E-05
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	2.E-02	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	2.E-03	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	4.E-04	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	0.01	0.02	0.01	0.01	0.04	0.06	0.03	0.03	0.03	0.03	0.03	0.04
Rolling 12 Month Sum (ton/year)	0.19	0.17	0.16	0.14	0.16	0.21	0.22	0.24	0.26	0.29	0.31	0.34

	Year 4 - Year 10 (Routine Ops with Infill Drilling)											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]												
Drill Rigs	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02
Drilling Non-Mobile Support Equipment	6.E-03	6.E-03	6.E-03	6.E-03	6.E-03	6.E-03	6.E-03	6.E-03	6.E-03	6.E-03	6.E-03	6.E-03
Kuukpik Supporting Pad Generators	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03
Drilling Mobile Equipment Tailpipe	4.E-04	4.E-04	4.E-04	4.E-04	4.E-04	4.E-04	4.E-04	4.E-04	4.E-04	4.E-04	4.E-04	4.E-04
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	7E-04	7E-04	7E-04	7E-04	7E-04	7E-04	7E-04	7E-04	7E-04	7E-04	7E-04	7E-04
Mobile Equipment Tailpipe	2.E-05	2.E-05	2.E-05	2.E-05	2.E-05	2.E-05	2.E-05	2.E-05	2.E-05	2.E-05	2.E-05	2.E-05
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	4.E-04	2.E-03	1.E-03	1.E-03	5.E-04	---	---	---
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	2.E-02	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	2.E-03	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	4.E-04	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	0.03	0.03	0.03	0.03	0.04	0.06	0.04	0.04	0.04	0.03	0.03	0.03
Rolling 12 Month Sum (ton/year)	0.45											

	Year 11 - Life of Wells (Routine Operations)											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	7E-04	7E-04	7E-04	7E-04	7E-04	7E-04	7E-04	7E-04	7E-04	7E-04	7E-04	7E-04
Mobile Equipment Tailpipe	2.E-05	2.E-05	2.E-05	2.E-05	2.E-05	2.E-05	2.E-05	2.E-05	2.E-05	2.E-05	2.E-05	2.E-05
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	4.E-04	2.E-03	1.E-03	1.E-03	5.E-04	---	---	---
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Rolling 12 Month Sum (ton/year)	0.21											

Project: GMT2, Alternative A

Date: 7/28/2017

Project Emissions Summary - **CO2e**

	Year 1			Year 2												Year 3											
	10	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Construction																											
Construction Camp Generators	---	---	229	573	459	459	459	459	229	229	287	229	---	172	229	573	459	459	459	459	229	229	287	229	229	57.3	---
Aircraft Activity	---	3.97	3.97	1.99	3.97	3.97	3.97	21.7	24.2	21.6	22.0	5.56	---	3.97	3.97	1.99	3.97	3.97	3.97	20.3	22.8	20.1	20.5	5.56	3.97	3.97	3.97
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	996	996	996	498	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	131	261	261	131	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	233	233	58.3	---	---	---	---	---	---	---
Seasonal Ice Road Construction	---	690	919	1,149	919	---	---	---	---	---	---	---	---	690	919	1,149	919	---	---	---	---	---	---	---	---	---	---
Gravel Roads and Pad Construction	---	---	---	---	3,735	3,735	3,735	---	---	---	291	233	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	936	1,170	936	936	1,170	936	936	1,170	936
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	876	1,095	876	876	219	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	124	99.3	49.6	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	385	385	385	385	385	385	385	385	385	385	385	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	158	158	158	158	158	158	158	158	158	158	158	158	158	158
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]																											
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1,114	1,114	1,114	1,114	1,114	1,114	1,114	1,114
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	647	647	647	647	647	647	647	647
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	197	197	197	197	197	197	197	197
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	50.5	50.5	50.5	50.5	50.5	50.5	50.5	50.5
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	70.5	70.5	70.5	70.5	70.5	70.5	70.5	70.5
Infill Drilling [1]																											
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations																											
Line Heater	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	385
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	53.9
Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	32.3
Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.80
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Interventions																											
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	2264	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	189	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	49.4	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	0	1,079	1,538	2,110	5,502	4,582	5,459	1,961	1,515	1,512	1,204	853	0	1,023	1,310	2,006	2,765	2,160	3,046	4,573	5,927	3,422	3,714	3,408	3,406	3,468	3,649
Rolling 12 Month Sum (ton/year)												27,313	27,313	27,258	27,030	26,927	24,190	21,767	19,355	21,967	26,379	28,289	30,800	33,355	36,761	39,206	41,545

	Year 4 - Year 10 (Routine Ops with Infill Drilling)												Year 11 - Life of Wells (Routine Operations)											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Construction																								
Construction Camp Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]																								
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]																								
Drill Rigs	1,114	1,114	1,114	1,114	1,114	1,114	1,114	1,114	1,114	1,114	1,114	1,114	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	647	647	647	647	647	647	647	647	647	647	647	647	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	197	197	197	197	197	197	197	197	197	197	197	197	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	49.4	49.4	49.4	49.4	49.4	49.4	49.4	49.4	49.4	49.4	49.4	49.4	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations																								
Line Heater	385	385	385	385	385	385	385	385	385	385	385	385	385	385	385	385	385	385	385	385	385	385	385	385
Pigging Venting	---	---	---	---	---	4.12	---	---	---	---	---	---	---	---	---	---	---	4.12	---	---	---	---	---	---
Fugitive Components	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9
Emergency Generator	32.3	32.3	32.3	32.3	32.3	32.3	32.3	32.3	32.3	32.3	32.3	32.3	32.3	32.3	32.3	32.3	32.3	32.3	32.3	32.3	32.3	32.3	32.3	32.3
Mobile Equipment Tailpipe	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	1.06	3.97	2.91	2.65	1.32	---	---	---	---	---	---	---	1.06	3.97	2.91	2.65	1.32	---	---	---
Well Interventions																								
Well Intervention Main Equipment	---	---	---	---	---	2264	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	189	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	49.4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	2,480	2,480	2,480	2,480	2,481	4,990	2,483	2,482	2,481	2,480	2,480	2,480	473	473	473	473	474	481	475	475	474	473	473	473
Rolling 12 Month Sum (ton/year)	32,276												5,687											

Project: GMT2, Alternative A

Date: 7/28/2017

Project Emissions Summary -

Total HAPs

	Year 1			Year 2											
	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Construction															
Construction Camp Generators	---	---	4.E-03	1.E-02	8.E-03	8.E-03	8.E-03	8.E-03	4.E-03	4.E-03	5.E-03	4.E-03	---	3.E-03	4.E-03
Aircraft Activity	---	2.E-04	2.E-04	1.E-04	2.E-04	2.E-04	2.E-04	5.E-04	5.E-04	5.E-04	5.E-04	3.E-04	---	2.E-04	2.E-04
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	---	1.E-01	1.E-01	2.E-01	1.E-01	---	---	---	---	---	---	---	---	1.E-01	1.E-01
Gravel Roads and Pad Construction	---	---	---	---	3.E-01	3.E-01	3.E-01	---	---	---	3.E-02	3.E-02	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	3.E-02	4.E-02	3.E-02	3.E-02	9.E-03	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	9.E-03	9.E-03
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]															
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]															
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations															
Line Heater	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Interventions															
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	0.E+00	1.E-01	2.E-01	2.E-01	5.E-01	3.E-01	4.E-01	7.E-02	6.E-02	6.E-02	7.E-02	5.E-02	0.E+00	1.E-01	2.E-01
Rolling 12 Month Sum (ton/year)												2.02	2.02	2.01	2.00

	Year 3											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	1.E-02	8.E-03	8.E-03	8.E-03	8.E-03	4.E-03	4.E-03	5.E-03	4.E-03	4.E-03	1.E-03	---
Aircraft Activity	1.E-04	2.E-04	2.E-04	2.E-04	4.E-04	5.E-04	5.E-04	5.E-04	2.E-04	2.E-04	2.E-04	2.E-04
Pipeline Installation	---	7.E-02	7.E-02	7.E-02	3.E-02	---	---	---	---	---	---	---
Power Line Installation	---	5.E-03	9.E-03	9.E-03	5.E-03	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	6.E-03	6.E-03	1.E-03	---	---	---	---	---	---	---
Seasonal Ice Road Construction	2.E-01	1.E-01	---	---	---	---	---	---	---	---	---	---
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	4.E-02	5.E-02	4.E-02	4.E-02	5.E-02	4.E-02	4.E-02	5.E-02	4.E-02
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	2.E-02	1.E-02	7.E-03	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	9.E-03	9.E-03	9.E-03	9.E-03	9.E-03	9.E-03	9.E-03	9.E-03	9.E-03	9.E-03	9.E-03	9.E-03
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02
Drilling Non-Mobile Support Equipment	---	---	---	---	4.E-03	4.E-03	4.E-03	4.E-03	4.E-03	4.E-03	4.E-03	4.E-03
Kuukpik Supporting Pad Generators	---	---	---	---	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03
Drilling Mobile Equipment Tailpipe	---	---	---	---	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	---	---	---	---	---	---	---	---	---	---	---	8.E-03
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	3.E-04
Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	1E-04
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	2.E-02	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	1.E-03	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	3.E-03	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	2.E-01	2.E-01	1.E-01	1.E-01	1.E-01	1.E-01	7.E-02	8.E-02	7.E-02	7.E-02	8.E-02	8.E-02
Rolling 12 Month Sum (ton/year)	2.00	1.76	1.53	1.29	1.34	1.38	1.39	1.41	1.43	1.50	1.46	1.39

	Year 4 - Year 10 (Routine Ops with Infill Drilling)											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]												
Drill Rigs	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02
Drilling Non-Mobile Support Equipment	4.E-03	4.E-03	4.E-03	4.E-03	4.E-03	4.E-03	4.E-03	4.E-03	4.E-03	4.E-03	4.E-03	4.E-03
Kuukpik Supporting Pad Generators	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03
Drilling Mobile Equipment Tailpipe	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	8.E-03	8.E-03	8.E-03	8.E-03	8.E-03	8.E-03	8.E-03	8.E-03	8.E-03	8.E-03	8.E-03	8.E-03
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04
Mobile Equipment Tailpipe	1E-04	1E-04	1E-04	1E-04	1E-04	1E-04	1E-04	1E-04	1E-04	1E-04	1E-04	1E-04
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	1.E-05	5.E-05	4.E-05	3.E-05	2.E-05	---	---	---
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	2.E-02	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	1.E-03	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	3.E-03	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	3.E-02	3.E-02	3.E-02	3.E-02	3.E-02	6.E-02	3.E-02	3.E-02	3.E-02	3.E-02	3.E-02	3.E-02
Rolling 12 Month Sum (ton/year)	0.40											

	Year 11 - Life of Wells (Routine Operations)											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	8.E-03	8.E-03	8.E-03	8.E-03	8.E-03	8.E-03	8.E-03	8.E-03	8.E-03	8.E-03	8.E-03	8.E-03
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04
Mobile Equipment Tailpipe	1E-04	1E-04	1E-04	1E-04	1E-04	1E-04	1E-04	1E-04	1E-04	1E-04	1E-04	1.E-04
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	1.E-05	5.E-05	4.E-05	3.E-05	2.E-05	---	---	---
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	9.E-03	9.E-03	9.E-03	9.E-03	9.E-03	9.E-03	9.E-03	9.E-03	9.E-03	9.E-03	9.E-03	9.E-03
Rolling 12 Month Sum (ton/year)	0.10											

Project: GMT2, Alternative A

Date: 7/28/2017

Project Emissions Summary - **Benzene**

	Year 1			Year 2											
	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Construction															
Construction Camp Generators	---	---	1.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	1.E-03	1.E-03	2.E-03	1.E-03	---	1.E-03	1.E-03
Aircraft Activity	---	2.E-05	2.E-05	1.E-05	2.E-05	2.E-05	2.E-05	5.E-05	5.E-05	6.E-05	6.E-05	4.E-05	---	2.E-05	2.E-05
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	---	8.E-03	1.E-02	1.E-02	1.E-02	---	---	---	---	---	---	---	---	8.E-03	1.E-02
Gravel Roads and Pad Construction	---	---	---	---	3.E-02	3.E-02	3.E-02	---	---	---	3.E-03	2.E-03	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	3.E-03	4.E-03	3.E-03	3.E-03	8.E-04	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	6.E-04	6.E-04
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]															
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]															
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations															
Line Heater	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Interventions															
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	0.E+00	9.E-03	1.E-02	2.E-02	4.E-02	3.E-02	4.E-02	8.E-03	6.E-03	6.E-03	6.E-03	5.E-03	0.E+00	1.E-02	1.E-02
Rolling 12 Month Sum (ton/year)												0.18	0.18	0.18	0.18

	Year 3											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	1.E-03	1.E-03	2.E-03	1.E-03	1.E-03	3.E-04	---
Aircraft Activity	1.E-05	2.E-05	2.E-05	2.E-05	5.E-05	5.E-05	6.E-05	6.E-05	3.E-05	2.E-05	2.E-05	2.E-05
Pipeline Installation	---	6.E-03	6.E-03	6.E-03	3.E-03	---	---	---	---	---	---	---
Power Line Installation	---	4.E-04	8.E-04	8.E-04	4.E-04	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	5.E-04	5.E-04	1.E-04	---	---	---	---	---	---	---
Seasonal Ice Road Construction	1.E-02	1.E-02	---	---	---	---	---	---	---	---	---	---
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	3.E-03	4.E-03	3.E-03	3.E-03	4.E-03	3.E-03	3.E-03	4.E-03	3.E-03
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	2.E-03	1.E-03	6.E-04	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	8.E-04	8.E-04	8.E-04	8.E-04	8.E-04	8.E-04	8.E-04	8.E-04
Drilling Non-Mobile Support Equipment	---	---	---	---	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03
Kuukpik Supporting Pad Generators	---	---	---	---	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03
Drilling Mobile Equipment Tailpipe	---	---	---	---	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05
Infill Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	---	---	---	---	---	---	---	---	---	---	---	9.E-06
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	3.E-04
Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	2E-04
Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	8.E-06
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	1.E-02	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	5.E-04	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	2.E-04	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	2.E-02	2.E-02	1.E-02	1.E-02	2.E-02	2.E-02	9.E-03	1.E-02	9.E-03	9.E-03	9.E-03	8.E-03
Rolling 12 Month Sum (ton/year)	0.18	0.16	0.14	0.12	0.13	0.14	0.14	0.15	0.15	0.16	0.16	0.16

	Year 4 - Year 10 (Routine Ops with Infill Drilling)											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]												
Drill Rigs	8.E-04	8.E-04	8.E-04	8.E-04	8.E-04	8.E-04	8.E-04	8.E-04	8.E-04	8.E-04	8.E-04	8.E-04
Drilling Non-Mobile Support Equipment	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03
Kuukpik Supporting Pad Generators	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03
Drilling Mobile Equipment Tailpipe	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06
Pigging Venting	---	---	---	---	---	9.E-06	---	---	---	---	---	---
Fugitive Components	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04
Emergency Generator	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04
Mobile Equipment Tailpipe	8.E-06	8.E-06	8.E-06	8.E-06	8.E-06	8.E-06	8.E-06	8.E-06	8.E-06	8.E-06	8.E-06	8.E-06
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	1.E-06	6.E-06	4.E-06	4.E-06	2.E-06	---	---	---
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	1.E-02	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	5.E-04	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	2.E-04	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	4.E-03	4.E-03	4.E-03	4.E-03	4.E-03	2.E-02	4.E-03	4.E-03	4.E-03	4.E-03	4.E-03	4.E-03
Rolling 12 Month Sum (ton/year)	0.064											

	Year 11 - Life of Wells (Routine Operations)											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06
Pigging Venting	---	---	---	---	---	9.E-06	---	---	---	---	---	---
Fugitive Components	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04
Emergency Generator	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04
Mobile Equipment Tailpipe	8.E-06	8.E-06	8.E-06	8.E-06	8.E-06	8.E-06	8.E-06	8.E-06	8.E-06	8.E-06	8.E-06	8.E-06
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	1.E-06	6.E-06	4.E-06	4.E-06	2.E-06	---	---	---
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04
Rolling 12 Month Sum (ton/year)	0.006											

Project: GMT2, Alternative A

Date: 7/28/2017

Project Emissions Summary - **Toluene**

	Year 1			Year 2												Year 3												Year 4 - Year 10 (Routine Ops with Infill Drilling)												Year 11 - Life of Wells (Routine Operations)											
	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Construction																																																			
Construction Camp Generators	---	---	6.E-04	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	6.E-04	6.E-04	7.E-04	6.E-04	---	4.E-04	6.E-04	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	6.E-04	6.E-04	7.E-04	6.E-04	6.E-04	1.E-04	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	9.E-06	9.E-06	5.E-06	9.E-06	9.E-06	9.E-06	2.E-05	2.E-05	2.E-05	2.E-05	1.E-05	---	9.E-06	9.E-06	5.E-06	9.E-06	9.E-06	9.E-06	2.E-05	2.E-05	2.E-05	2.E-05	1.E-05	9.E-06	9.E-06	9.E-06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	6.E-03	6.E-03	6.E-03	3.E-03	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	4.E-04	8.E-04	8.E-04	4.E-04	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	4.E-04	4.E-04	1.E-04	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	---	9.E-03	1.E-02	1.E-02	1.E-02	---	---	---	---	---	---	---	---	9.E-03	1.E-02	1.E-02	1.E-02	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Roads and Pad Construction	---	---	---	---	3.E-02	3.E-02	3.E-02	---	---	---	3.E-03	3.E-03	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	3.E-03	4.E-03	3.E-03	3.E-03	4.E-03	3.E-03	3.E-03	4.E-03	3.E-03	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	3.E-03	3.E-03	3.E-03	3.E-03	7.E-04	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.E-03	1.E-03	6.E-04	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]																																																			
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	8.E-04	8.E-04	8.E-04	8.E-04	8.E-04	8.E-04	8.E-04	8.E-04	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]																																																			
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	8.E-04	8.E-04	8.E-04	8.E-04	8.E-04	8.E-04	8.E-04	8.E-04	8.E-04	8.E-04	8.E-04	8.E-04	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations																																																			
Line Heater	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.E-05	---	---	---	---	---	---	---	---	---	---	---	1.E-05	---	---	---	---	---	---
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03
Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	6E-05	6E-05	6E-05	6E-05	6E-05	6E-05	6E-05	6E-05	6E-05	6E-05	6E-05	6E-05	6E-05	6E-05	6E-05	6E-05	6E-05	6E-05	6E-05	6E-05	6E-05	6E-05	6E-05	6E-05	6E-05
Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	5.E-07	2.E-06	1.E-06	1.E-06	7.E-07	---	---	---	---	---	---	---	5.E-07	2.E-06	1.E-06	1.E-06	7.E-07	---	---	---
Well Interventions																																																			
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	4.E-03	---	---	---	---	---	---	---	---	---	---	---	4.E-03	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	2.E-04	---	---	---	---	---	---	---	---	---	---	---	2.E-04	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	2.E-04	---	---	---	---	---	---	---	---	---	---	---	2.E-04	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	0.E+00	1.E-02	1.E-02	2.E-02	4.E-02	3.E-02	3.E-02	6.E-03	5.E-03	5.E-03	6.E-03	5.E-03	0.E+00	1.E-02	1.E-02	2.E-02	2.E-02	1.E-02	1.E-02	1.E-02	1.E-02	6.E-03	7.E-03	6.E-03	6.E-03	6.E-03	7.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	7.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03
Rolling 12 Month Sum (ton/year)												0.18	0.18	0.18	0.17	0.18	0.15	0.13	0.11	0.12	0.12	0.12	0.12	0.12	0.13	0.13	0.12	0.041												0.013											

Project: GMT2, Alternative A

Date: 7/28/2017

Project Emissions Summary -

Ethylbenzene

	Year 1			Year 2											
	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Construction															
Construction Camp Generators	---	---	0	0	0	0	0	0	0	0	0	0	---	0	0
Aircraft Activity	---	3.E-06	3.E-06	1.E-06	3.E-06	3.E-06	3.E-06	6.E-06	6.E-06	6.E-06	7.E-06	4.E-06	---	3.E-06	3.E-06
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	---	2.E-03	3.E-03	3.E-03	3.E-03	---	---	---	---	---	---	---	---	2.E-03	3.E-03
Gravel Roads and Pad Construction	---	---	---	---	5.E-03	5.E-03	5.E-03	---	---	---	5.E-04	4.E-04	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	7.E-04	8.E-04	7.E-04	7.E-04	2.E-04	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	2.E-04	2.E-04
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]															
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]															
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations															
Line Heater	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Interventions															
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	0.E+00	2.E-03	3.E-03	4.E-03	8.E-03	6.E-03	6.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	0.E+00	2.E-03	3.E-03
Rolling 12 Month Sum (ton/year)												0.036	0.036	0.035	0.035

	Year 3											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	0	0	0	0	0	0	0	0	0	0	0	---
Aircraft Activity	1.E-06	3.E-06	3.E-06	3.E-06	5.E-06	6.E-06	6.E-06	6.E-06	3.E-06	3.E-06	3.E-06	3.E-06
Pipeline Installation	---	1.E-03	1.E-03	1.E-03	6.E-04	---	---	---	---	---	---	---
Power Line Installation	---	8.E-05	2.E-04	2.E-04	8.E-05	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	1.E-04	1.E-04	3.E-05	---	---	---	---	---	---	---
Seasonal Ice Road Construction	3.E-03	3.E-03	---	---	---	---	---	---	---	---	---	---
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	7.E-04	9.E-04	7.E-04	7.E-04	9.E-04	7.E-04	7.E-04	9.E-04	7.E-04
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	3.E-04	3.E-04	1.E-04	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06
Drilling Non-Mobile Support Equipment	---	---	---	---	8.E-07	8.E-07	8.E-07	8.E-07	8.E-07	8.E-07	8.E-07	8.E-07
Kuukpik Supporting Pad Generators	---	---	---	---	0	0	0	0	0	0	0	0
Drilling Mobile Equipment Tailpipe	---	---	---	---	7.E-05	7.E-05	7.E-05	7.E-05	7.E-05	7.E-05	7.E-05	7.E-05
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06
Infill Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	---	---	---	---	---	---	---	---	---	---	---	0
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	9.E-04
Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	0E+00
Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	3.E-06
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	5.E-07	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	2.E-07	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	7.E-05	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	4.E-03	4.E-03	2.E-03	2.E-03	2.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	2.E-03
Rolling 12 Month Sum (ton/year)	0.035	0.031	0.027	0.023	0.024	0.023	0.023	0.023	0.023	0.024	0.023	0.023

	Year 4 - Year 10 (Routine Ops with Infill Drilling)											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]												
Drill Rigs	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06
Drilling Non-Mobile Support Equipment	8.E-07	8.E-07	8.E-07	8.E-07	8.E-07	8.E-07	8.E-07	8.E-07	8.E-07	8.E-07	8.E-07	8.E-07
Kuukpik Supporting Pad Generators	0	0	0	0	0	0	0	0	0	0	0	0
Drilling Mobile Equipment Tailpipe	7.E-05	7.E-05	7.E-05	7.E-05	7.E-05	7.E-05	7.E-05	7.E-05	7.E-05	7.E-05	7.E-05	7.E-05
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	0	0	0	0	0	0	0	0	0	0	0	0
Pigging Venting	---	---	---	---	---	3.E-06	---	---	---	---	---	---
Fugitive Components	9.E-04	9.E-04	9.E-04	9.E-04	9.E-04	9.E-04	9.E-04	9.E-04	9.E-04	9.E-04	9.E-04	9.E-04
Emergency Generator	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
Mobile Equipment Tailpipe	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	2.E-07	7.E-07	5.E-07	4.E-07	2.E-07	---	---	---
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	5.E-07	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	2.E-07	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	7.E-05	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03
Rolling 12 Month Sum (ton/year)	0.012											

	Year 11 - Life of Wells (Routine Operations)											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	0	0	0	0	0	0	0	0	0	0	0	0
Pigging Venting	---	---	---	---	---	3.E-06	---	---	---	---	---	---
Fugitive Components	9.E-04	9.E-04	9.E-04	9.E-04	9.E-04	9.E-04	9.E-04	9.E-04	9.E-04	9.E-04	9.E-04	9.E-04
Emergency Generator	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
Mobile Equipment Tailpipe	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	2.E-07	7.E-07	5.E-07	4.E-07	2.E-07	---	---	---
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	9.E-04	9.E-04	9.E-04	9.E-04	9.E-04	9.E-04	9.E-04	9.E-04	9.E-04	9.E-04	9.E-04	9.E-04
Rolling 12 Month Sum (ton/year)	0.011											

Project: GMT2, Alternative A

Date: 7/28/2017

Project Emissions Summary - **Xylenes**

	Year 1			Year 2											
	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Construction															
Construction Camp Generators	---	---	4.E-04	1.E-03	8.E-04	8.E-04	8.E-04	8.E-04	4.E-04	4.E-04	5.E-04	4.E-04	---	3.E-04	4.E-04
Aircraft Activity	---	7.E-06	7.E-06	3.E-06	7.E-06	7.E-06	7.E-06	1.E-05	1.E-05	2.E-05	2.E-05	1.E-05	---	7.E-06	7.E-06
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	---	8.E-03	1.E-02	1.E-02	1.E-02	---	---	---	---	---	---	---	---	8.E-03	1.E-02
Gravel Roads and Pad Construction	---	---	---	---	2.E-02	2.E-02	2.E-02	---	---	---	3.E-03	2.E-03	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	2.E-03	3.E-03	2.E-03	2.E-03	5.E-04	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	7.E-04	7.E-04
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]															
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]															
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations															
Line Heater	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Interventions															
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	0.E+00	1.E-02	1.E-02	2.E-02	4.E-02	3.E-02	3.E-02	5.E-03	4.E-03	4.E-03	5.E-03	4.E-03	0.E+00	9.E-03	1.E-02
Rolling 12 Month Sum (ton/year)												0.15	0.15	0.15	0.15

	Year 3											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	1.E-03	8.E-04	8.E-04	8.E-04	8.E-04	4.E-04	4.E-04	5.E-04	4.E-04	4.E-04	1.E-04	---
Aircraft Activity	3.E-06	7.E-06	7.E-06	7.E-06	1.E-05	1.E-05	1.E-05	1.E-05	7.E-06	7.E-06	7.E-06	7.E-06
Pipeline Installation	---	5.E-03	5.E-03	5.E-03	2.E-03	---	---	---	---	---	---	---
Power Line Installation	---	3.E-04	6.E-04	6.E-04	3.E-04	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	3.E-04	3.E-04	8.E-05	---	---	---	---	---	---	---
Seasonal Ice Road Construction	1.E-02	1.E-02	---	---	---	---	---	---	---	---	---	---
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	2.E-03	3.E-03	2.E-03	2.E-03	3.E-03	2.E-03	2.E-03	3.E-03	2.E-03
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	1.E-03	1.E-03	5.E-04	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	7.E-04	7.E-04	7.E-04	7.E-04	7.E-04	7.E-04	7.E-04	7.E-04	7.E-04	7.E-04	7.E-04	7.E-04
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04
Drilling Non-Mobile Support Equipment	---	---	---	---	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04
Kuukpik Supporting Pad Generators	---	---	---	---	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04
Drilling Mobile Equipment Tailpipe	---	---	---	---	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05
Infill Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	---	---	---	---	---	---	---	---	---	---	---	0
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	1.E-03
Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	4E-05
Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	1.E-05
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	2.E-03	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	1.E-04	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	2.E-04	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	2.E-02	2.E-02	8.E-03	1.E-02	8.E-03	7.E-03	5.E-03	5.E-03	5.E-03	5.E-03	5.E-03	6.E-03
Rolling 12 Month Sum (ton/year)	0.15	0.13	0.12	0.10	0.10	0.10	0.11	0.11	0.11	0.11	0.11	0.10

	Year 4 - Year 10 (Routine Ops with Infill Drilling)											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]												
Drill Rigs	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04
Drilling Non-Mobile Support Equipment	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04
Kuukpik Supporting Pad Generators	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04
Drilling Mobile Equipment Tailpipe	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	0	0	0	0	0	0	0	0	0	0	0	0
Pigging Venting	---	---	---	---	---	4.E-06	---	---	---	---	---	---
Fugitive Components	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03
Emergency Generator	4E-05	4E-05	4E-05	4E-05	4E-05	4E-05	4E-05	4E-05	4E-05	4E-05	4E-05	4E-05
Mobile Equipment Tailpipe	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	4.E-07	1.E-06	1.E-06	9.E-07	4.E-07	---	---	---
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	2.E-03	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	1.E-04	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	2.E-04	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	6.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03
Rolling 12 Month Sum (ton/year)	0.035											

	Year 11 - Life of Wells (Routine Operations)											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	0	0	0	0	0	0	0	0	0	0	0	0
Pigging Venting	---	---	---	---	---	4.E-06	---	---	---	---	---	---
Fugitive Components	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03
Emergency Generator	4E-05	4E-05	4E-05	4E-05	4E-05	4E-05	4E-05	4E-05	4E-05	4E-05	4E-05	4E-05
Mobile Equipment Tailpipe	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	4.E-07	1.E-06	1.E-06	9.E-07	4.E-07	---	---	---
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03
Rolling 12 Month Sum (ton/year)	0.017											

Project: GMT2, Alternative A

Date: 7/28/2017

Project Emissions Summary - **n-Hexane**

	Year 1			Year 2											
	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Construction															
Construction Camp Generators	---	---	0	0	0	0	0	0	0	0	0	0	---	0	0
Aircraft Activity	---	0	0	0	0	0	0	0	0	0	0	0	---	0	0
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	---	1.E-03	1.E-03	2.E-03	1.E-03	---	---	---	---	---	---	---	---	1.E-03	1.E-03
Gravel Roads and Pad Construction	---	---	---	---	3.E-03	3.E-03	3.E-03	---	---	---	4.E-04	3.E-04	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	2.E-04	3.E-04	2.E-04	2.E-04	6.E-05	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	4.E-04	4.E-04	4.E-04	4.E-04	4.E-04	4.E-04	4.E-04	4.E-04	4.E-04	4.E-04	4.E-04	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	2.E-04	2.E-04
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]															
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]															
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations															
Line Heater	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Interventions															
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	0.E+00	1.E-03	2.E-03	2.E-03	4.E-03	3.E-03	3.E-03	7.E-04	6.E-04	6.E-04	8.E-04	7.E-04	0.E+00	1.E-03	2.E-03
Rolling 12 Month Sum (ton/year)												0.020	0.020	0.019	0.019

	Year 3											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	0	0	0	0	0	0	0	0	0	0	0	---
Aircraft Activity	0	0	0	0	0	0	0	0	0	0	0	0
Pipeline Installation	---	6.E-04	6.E-04	6.E-04	3.E-04	---	---	---	---	---	---	---
Power Line Installation	---	3.E-05	7.E-05	7.E-05	3.E-05	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	3.E-05	3.E-05	8.E-06	---	---	---	---	---	---	---
Seasonal Ice Road Construction	2.E-03	1.E-03	---	---	---	---	---	---	---	---	---	---
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	2.E-04	3.E-04	2.E-04	2.E-04	3.E-04	2.E-04	2.E-04	3.E-04	2.E-04
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	1.E-04	1.E-04	6.E-05	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	0	0	0	0	0	0	0	0
Drilling Non-Mobile Support Equipment	---	---	---	---	0	0	0	0	0	0	0	0
Kuukpik Supporting Pad Generators	---	---	---	---	0	0	0	0	0	0	0	0
Drilling Mobile Equipment Tailpipe	---	---	---	---	5.E-05	5.E-05	5.E-05	5.E-05	5.E-05	5.E-05	5.E-05	5.E-05
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03
Infill Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	---	---	---	---	---	---	---	---	---	---	---	8.E-03
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	1.E-02
Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	0E+00
Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	2.E-06
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	0.E+00	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	0.E+00	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	5.E-05	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	2.E-03	2.E-03	9.E-04	1.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-02
Rolling 12 Month Sum (ton/year)	0.019	0.017	0.015	0.013	0.014	0.015	0.016	0.017	0.017	0.019	0.019	0.038

	Year 4 - Year 10 (Routine Ops with Infill Drilling)											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]												
Drill Rigs	0	0	0	0	0	0	0	0	0	0	0	0
Drilling Non-Mobile Support Equipment	0	0	0	0	0	0	0	0	0	0	0	0
Kuukpik Supporting Pad Generators	0	0	0	0	0	0	0	0	0	0	0	0
Drilling Mobile Equipment Tailpipe	5.E-05	5.E-05	5.E-05	5.E-05	5.E-05	5.E-05	5.E-05	5.E-05	5.E-05	5.E-05	5.E-05	5.E-05
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	8.E-03	8.E-03	8.E-03	8.E-03	8.E-03	8.E-03	8.E-03	8.E-03	8.E-03	8.E-03	8.E-03	8.E-03
Pigging Venting	---	---	---	---	---	4.E-04	---	---	---	---	---	---
Fugitive Components	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02
Emergency Generator	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
Mobile Equipment Tailpipe	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	0	0	0	0	0	---	---	---
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	0.E+00	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	0.E+00	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	5.E-05	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02
Rolling 12 Month Sum (ton/year)						0.23						

	Year 11 - Life of Wells (Routine Operations)											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	8.E-03	8.E-03	8.E-03	8.E-03	8.E-03	8.E-03	8.E-03	8.E-03	8.E-03	8.E-03	8.E-03	8.E-03
Pigging Venting	---	---	---	---	---	4.E-04	---	---	---	---	---	---
Fugitive Components	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02
Emergency Generator	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
Mobile Equipment Tailpipe	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	0	0	0	0	0	---	---	---
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02
Rolling 12 Month Sum (ton/year)						0.23						

Project: GMT2, Alternative A

Date: 7/28/2017

Project Emissions Summary - **Formaldehyde**

	Year 1			Year 2												Year 3											
	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Construction																											
Construction Camp Generators	---	---	2.E-03	4.E-03	3.E-03	3.E-03	3.E-03	3.E-03	2.E-03	2.E-03	2.E-03	2.E-03	---	1.E-03	2.E-03	4.E-03	3.E-03	3.E-03	3.E-03	3.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	4.E-04	---
Aircraft Activity	---	2.E-04	2.E-04	9.E-05	2.E-04	2.E-04	2.E-04	4.E-04	4.E-04	4.E-04	4.E-04	3.E-04	---	2.E-04	2.E-04	9.E-05	2.E-04	2.E-04	2.E-04	4.E-04	4.E-04	4.E-04	4.E-04	2.E-04	2.E-04	2.E-04	2.E-04
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	5.E-02	5.E-02	5.E-02	3.E-02	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	3.E-03	7.E-03	7.E-03	3.E-03	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	4.E-03	4.E-03	1.E-03	---	---	---	---	---	---	---
Seasonal Ice Road Construction	---	8.E-02	1.E-01	1.E-01	1.E-01	---	---	---	---	---	---	---	---	8.E-02	1.E-01	1.E-01	1.E-01	---	---	---	---	---	---	---	---	---	---
Gravel Roads and Pad Construction	---	---	---	---	2.E-01	2.E-01	2.E-01	---	---	---	2.E-02	2.E-02	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	3.E-02	3.E-02	3.E-02	3.E-02	3.E-02	3.E-02	3.E-02	3.E-02	3.E-02
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	3.E-02	3.E-02	3.E-02	3.E-02	6.E-03	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.E-02	1.E-02	5.E-03	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	7.E-03	7.E-03	7.E-03	7.E-03	7.E-03	7.E-03	7.E-03	7.E-03	7.E-03	7.E-03	7.E-03	7.E-03	7.E-03	7.E-03
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]																											
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]																											
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations																											
Line Heater	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	3.E-04
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	2E-05
Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.E-04
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Interventions																											
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	7.E-03	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	3.E-04	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	2.E-03	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	0.E+00	9.E-02	1.E-01	1.E-01	3.E-01	2.E-01	3.E-01	5.E-02	4.E-02	4.E-02	5.E-02	4.E-02	0.E+00	8.E-02	1.E-01	2.E-01	2.E-01	8.E-02	1.E-01	9.E-02	6.E-02	5.E-02	6.E-02	5.E-02	5.E-02	6.E-02	5.E-02
Rolling 12 Month Sum (ton/year)												1.45	1.45	1.45	1.44	1.44	1.27	1.10	0.92	0.96	0.98	0.98	0.99	1.01	1.06	1.03	0.97

	Year 4 - Year 10 (Routine Ops with Infill Drilling)												Year 11 - Life of Wells (Routine Operations)											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Construction																								
Construction Camp Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]																								
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]																								
Drill Rigs	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations																								
Line Heater	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	2E-05	2E-05	2E-05	2E-05	2E-05	2E-05	2E-05	2E-05	2E-05	2E-05	2E-05	2E-05	2E-05	2E-05	2E-05	2E-05	2E-05	2E-05	2E-05	2E-05	2E-05	2E-05	2E-05	2E-05
Mobile Equipment Tailpipe	1.E-04	1.E-04	1.E-04	1.E-04	1.E-04	1.E-04	1.E-04	1.E-04	1.E-04	1.E-04	1.E-04	1.E-04	1.E-04	1.E-04	1.E-04	1.E-04	1.E-04	1.E-04	1.E-04	1.E-04	1.E-04	1.E-04	1.E-04	1.E-04
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	1.E-05	4.E-05	3.E-05	3.E-05	1.E-05	---	---	---	---	---	---	---	1.E-05	4.E-05	3.E-05	3.E-05	1.E-05	---	---	---
Well Interventions																								
Well Intervention Main Equipment	---	---	---	---	---	7.E-03	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	3.E-04	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	2.E-03	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	4.E-04	4.E-04	4.E-04	4.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	4.E-04	4.E-04	4.E-04
Rolling 12 Month Sum (ton/year)						0.20												0.005						

Project: GMT2, Alternative C

Date: 7/25/2017

Project Emissions Summary -

General Schedule

	Year 1			Year 2												Year 3											
	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Construction																											
Construction Camp Generators	0	0	1	2	2	2	2	2	1	1	1	1	0	1	1	2	2	2	2	2	1	1	1	1	1	1	0
Aircraft Activity	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Pipeline Installation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0
Power Line Installation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0
Fiber Optic Line Installation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0
Seasonal Ice Road Construction	0	1	1	1	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0
Gravel Roads and Pad Construction	0	0	0	0	1	1	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GMT2 Facilities Installation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1
Alpine ACF and CD5 Facilities Installation Related to GMT2	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vertical Support Member (VSM) Construction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0
Season 1 Construction Mobile Support Tailpipe	0	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Season 2 Construction Mobile Support Tailpipe	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Construction Fugitive Emissions	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0
Season 1 Construction Mobile Support Dust	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Season 2 Construction Mobile Support Dust	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0
Developmental Drilling																											
Drill Rigs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
Drillling Non-Mobile Support Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
Kuukpik Supporting Pad Generators	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
Drilling Mobile Equipment Tailpipe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
Drilling Mobile Equipment Fugitive Dust	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0
Drilling Well Flowback and Flaring	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
Infill Drilling																											
Drill Rigs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Drillling Non-Mobile Support Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kuukpik Supporting Pad Generators	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Drilling Mobile Equipment Tailpipe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ice Road Travel Tailpipe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Drilling Mobile Equipment Fugitive Dust	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Drilling Well Flowback and Flaring	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Routine Operations																											
Line Heater	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Pigging Venting	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Emergency Generator	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Occupied Structure Pad - Incinerator	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1
Occupied Structure Pad - Emergency Generator	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1
Fugitive Components	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Mobile Equipment Tailpipe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Mobile Equipment Fugitive Dust	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wind Erosion Fugitive Dust	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aircraft Activity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Well Interventions																											
Well Intervention Main Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Well Intervention Non-Mobile Support Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Well Intervention Moble Equipment Tailpipe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Well Intervention Moble Equipment Fugitive Dust	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Year 4 - Year 10 (Routine Ops with Infill Drilling)												Year 11 - Life of Wells (Routine Operations)											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Construction																								
Construction Camp Generators	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aircraft Activity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pipeline Installation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Power Line Installation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fiber Optic Line Installation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Seasonal Ice Road Construction	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gravel Roads and Pad Construction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GMT2 Facilities Installation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alpine ACF and CD5 Facilities Installation Related to GMT2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vertical Support Member (VSM) Construction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Season 1 Construction Mobile Support Tailpipe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Season 2 Construction Mobile Support Tailpipe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Construction Fugitive Emissions	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Season 1 Construction Mobile Support Dust	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Season 2 Construction Mobile Support Dust	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Developmental Drilling																								
Drill Rigs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Drillling Non-Mobile Support Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kuukpik Supporting Pad Generators	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Drilling Mobile Equipment Tailpipe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Drilling Mobile Equipment Fugitive Dust	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Drilling Well Flowback and Flaring	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Infill Drilling																								
Drill Rigs	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
Drillling Non-Mobile Support Equipment	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
Kuukpik Supporting Pad Generators	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
Drilling Mobile Equipment Tailpipe	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
Ice Road Travel Tailpipe	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Drilling Mobile Equipment Fugitive Dust	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Drilling Well Flowback and Flaring	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Routine Operations																								
Line Heater	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Pigging Venting	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Emergency Generator	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Occupied Structure Pad - Incinerator	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Occupied Structure Pad - Emergency Generator	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Fugitive Components	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Mobile Equipment Tailpipe	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Mobile Equipment Fugitive Dust	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0
Wind Erosion Fugitive Dust	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0
Aircraft Activity	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Well Interventions																								
Well Intervention Main Equipment	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Well Intervention Non-Mobile Support Equipment	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Well Intervention Moble Equipment Tailpipe	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Well Intervention Moble Equipment Fugitive Dust	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Notes:

1. Section 2.4.1 of the GMT2 Draft SEIS states that first season ice road construction is expected to begin in 4Q of Year 1 and the second season of ice road constuction is expected to beging in 4Q of Year 2. Additional ice road travel will occur during infill drilling operations and are itemized separate from gravel road travel for travel between GMT2 and GMT1 (Table 2.7.1 of GMT2 SEIS). Section 2.4.5 states that ice road construction typically begins in November. Ice roads can typically be used February through April and support power generation during ice season needed January through May.

2. Section 2.4.1 of the GMT2 Draft SEIS states that gravel mining, construction of gravel roads, construction of the pads, and pipeline construction is expected to begin in 1Q of Year 2. Gravel work is expected continue through 2Q and 3Q of Year 2.
3. Section 2.4.1 of the GMT2 Draft SEIS states that GMT1 and APF/CD1 tie in work is expected to begin in 2Q of Year 2 and continue through 3Q of Year 2.
4. Section 2.4.1 of the GMT2 Draft SEIS states that the pipeline vertical supports, pipelines, and telecom cables are expected to be installed starting in 1Q of Year 3.
5. Section 2.4.1 of the GMT2 Draft SEIS states that installation of equipment of the GMT2 pad is expected to occur during 2Q and 3Q of Year 3 and Section 2.5.4.2 states it will continue through December of Year 3.
6. Section 2.4.1 of the GMT2 Draft SEIS states that construction is expected to be completed in 4Q of Year 3.
7. Section 2.4.3 of the GMT2 Draft SEIS states that temporary power would be needed at the drill rig and drill camp until permanent power through the CD1/APF system can be used. The tie in to the CD1/APF system would use the pipeline supports and messenger cables.
8. Section 2.7.4.2 of the GMT2 Draft SEIS states that drilling is expected to begin in May of Year 3. The developmental drilling season will go from May of Year 3 through December of Year 3. Infill drilling will begin in January of Year 4 and last through Year 10 as is is expected that drilling will last 7 years.
9. Section 2.7.4.2 of the GMT2 Draft SEIS states that first oil will occur in December of Year 3.
10. Well interventions are only expected to occur for 224 hours per year and during the ice road season. In an effort to be conservative with monthly emissions, it is assumed all well intervention emissions will occur during December. No fugitive dust will occur from well interventions as they will occur during the ice road season.

Project: GMT2, Alternative C

Date: 7/25/2017

Project Emissions Summary - **NOx**

	Year 1			Year 2												
	10	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Construction															
Construction Camp Generators	---	---	1.32	4.94	3.95	3.95	3.95	2.63	1.32	1.32	1.65	1.32	---	0.99	1.32
Aircraft Activity	---	0.01	0.01	0.005	0.01	0.01	0.01	0.02	0.04	0.05	0.05	0.04	---	0.01	0.01
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	---	3.88	5.17	6.46	---	---	---	---	---	---	---	---	---	3.88	5.17
Gravel Roads and Pad Construction	---	---	---	---	13.6	13.6	13.6	---	---	---	0.91	0.73	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	0.98	1.22	0.98	0.98	0.24	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	1.42	1.42	1.42	1.42	1.42	1.42	1.42	1.42	1.42	1.42	1.42	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	0.50	0.50
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]															
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]															
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Road Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Ice Road Travel Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations															
Line Heater	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Occupied Structure Pad - Incinerator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Occupied Structure Pad - Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Interventions															
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	0	5.31	7.92	12.8	19.0	19.0	19.9	5.29	3.76	3.76	4.27	3.50	0	5.37	6.99
Rolling 12 Month Sum (ton/year)												104	104	105	104

	Year 3											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Construction												
Construction Camp Generators	3.29	2.63	2.63	2.63	2.63	1.32	1.32	1.65	1.32	1.32	0.33	---
Aircraft Activity	0.005	0.01	0.01	0.04	0.14	0.16	0.16	0.17	0.17	0.14	0.13	0.15
Pipeline Installation	---	2.64	2.64	2.64	1.32	---	---	---	---	---	---	---
Power Line Installation	---	0.13	0.27	0.27	0.13	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	0.19	0.19	0.05	---	---	---	---	---	---	---
Seasonal Ice Road Construction	6.46	5.17	---	---	---	---	---	---	---	---	3.88	5.17
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	2.09	2.61	2.09	2.09	2.61	2.09	2.09	2.61	2.09
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	1.24	1.00	0.50	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Drilling Non-Mobile Support Equipment	---	---	---	---	2.59	2.59	2.59	2.59	2.59	2.59	2.59	2.59
Kuukpik Supporting Pad Generators	---	---	---	---	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
Drilling Mobile Equipment Tailpipe	---	---	---	---	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Infill Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Road Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Ice Road Travel Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	---	---	---	---	---	---	---	---	---	---	---	0.44
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	0.30
Occupied Structure Pad - Incinerator	---	---	---	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
Occupied Structure Pad - Emergency Generator	---	---	---	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	0.02
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	19.3
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	0.73
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	0.16
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	11.5	12.1	6.74	8.70	12.5	9.18	9.18	10.0	9.19	9.16	12.6	34.0
Rolling 12 Month Sum (ton/year)	102	95.4	83.2	72.0	79.2	84.6	90.0	95.8	101	111	118	145

	Year 4 - Year 10 (Routine Ops with Infill Drilling)											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Construction												
Construction Camp Generators	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	1.04	1.04	---	---	---	---	---	---	---	---	1.04	1.04
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]												
Drill Rigs	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Drilling Non-Mobile Support Equipment	2.59	2.59	2.59	2.59	2.59	2.59	2.59	2.59	2.59	2.59	2.59	2.59
Kuukpik Supporting Pad Generators	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
Gravel Road Drilling Mobile Equipment Tailpipe	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
Ice Road Travel Tailpipe	0.11	0.11	0.11	0.11	0.11	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Occupied Structure Pad - Incinerator	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
Occupied Structure Pad - Emergency Generator	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Tailpipe	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	0.10	0.04	0.04	0.07	0.12	0.15	0.12	0.12	0.14	0.12	0.12	0.14
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	19.3
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	0.73
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	0.16
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	7.20	7.14	6.11	6.13	6.18	6.10	6.08	6.08	6.09	6.07	7.10	27.3
Rolling 12 Month Sum (ton/year)	97.6											

	Year 11 - Life of Wells (Routine Operations)											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Construction												
Construction Camp Generators	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	1.04	1.04	---	---	---	---	---	---	---	---	1.04	1.04
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Road Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Ice Road Travel Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Occupied Structure Pad - Incinerator	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
Occupied Structure Pad - Emergency Generator	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Tailpipe	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	0.01	0.01	0.01	0.01	0.03	0.06	0.03	0.03	0.05	0.03	0.03	0.05
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	2.14	2.14	1.10	1.11	1.12	1.15	1.13	1.13	1.14	1.12	2.15	2.18
Rolling 12 Month Sum (ton/year)	17.6											

KLEINFELDER
RAMBOLL ENVIRON

Project: GMT2, Alternative C

Date: 7/25/2017

Project Emissions Summary - **CO**

	Year 1			Year 2											
	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Construction															
Construction Camp Generators	---	---	1.15	4.32	3.46	3.46	3.46	2.30	1.15	1.15	1.44	1.15	---	0.86	1.15
Aircraft Activity	---	0.02	0.02	0.01	0.02	0.02	0.02	0.03	0.06	0.23	0.24	0.22	---	0.02	0.02
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	---	1.24	1.66	2.07	---	---	---	---	---	---	---	---	---	1.24	1.66
Gravel Roads and Pad Construction	---	---	---	---	5.28	5.28	5.28	---	---	---	0.32	0.26	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	0.51	0.64	0.51	0.51	0.13	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	0.24	0.24
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]															
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]															
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Road Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Ice Road Travel Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations															
Line Heater	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Occupied Structure Pad - Incinerator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Occupied Structure Pad - Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Interventions															
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	0	1.91	3.48	7.05	9.4	9.4	9.9	3.62	2.37	2.55	2.78	2.28	0	2.37	3.07
Rolling 12 Month Sum (ton/year)												54.8	54.8	55.2	54.8

	Year 3											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	2.88	2.30	2.30	2.30	2.30	1.15	1.15	1.44	1.15	1.15	0.29	---
Aircraft Activity	0.01	0.02	0.02	0.93	4.35	4.37	4.37	4.37	4.37	4.34	3.64	3.66
Pipeline Installation	---	0.84	0.84	0.84	0.42	---	---	---	---	---	---	---
Power Line Installation	---	0.06	0.11	0.11	0.06	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	0.08	0.08	0.02	---	---	---	---	---	---	---
Seasonal Ice Road Construction	2.07	1.66	---	---	---	---	---	---	---	---	1.24	1.66
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	1.10	1.37	1.10	1.10	1.37	1.10	1.10	1.37	1.10
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	0.44	0.35	0.17	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58
Drilling Non-Mobile Support Equipment	---	---	---	---	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20
Kuukpik Supporting Pad Generators	---	---	---	---	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Drilling Mobile Equipment Tailpipe	---	---	---	---	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
Infill Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Road Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Ice Road Travel Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	---	---	---	---	---	---	---	---	---	---	---	0.37
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	0.16
Occupied Structure Pad - Incinerator	---	---	---	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
Occupied Structure Pad - Emergency Generator	---	---	---	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	0.02
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	10.6
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	0.6
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	0.08
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	5.64	5.46	3.77	5.86	12.9	11.0	11.0	11.6	11.0	11.0	10.9	22.6
Rolling 12 Month Sum (ton/year)	53.4	49.5	43.8	39.8	49.1	57.7	66.1	74.9	83.7	94.6	103	123

	Year 4 - Year 10 (Routine Ops with Infill Drilling)											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	0.33	0.33	---	---	---	---	---	---	---	---	0.33	0.33
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]												
Drill Rigs	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58
Drilling Non-Mobile Support Equipment	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20
Kuukpik Supporting Pad Generators	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Gravel Road Drilling Mobile Equipment Tailpipe	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Ice Road Travel Tailpipe	0.06	0.06	0.06	0.06	0.06	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
Occupied Structure Pad - Incinerator	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
Occupied Structure Pad - Emergency Generator	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Tailpipe	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	4.11	0.59	0.59	1.49	4.14	4.15	4.14	4.14	4.15	4.13	4.13	4.14
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	10.6
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	0.6
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	0.08
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	9.15	5.63	5.30	6.20	8.85	8.81	8.80	8.79	8.8	8.79	9.12	20.4
Rolling 12 Month Sum (ton/year)	109											

	Year 11 - Life of Wells (Routine Operations)											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	0.33	0.33	---	---	---	---	---	---	---	---	---	---
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Road Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Ice Road Travel Tailpipe	---	---	---	----	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
Occupied Structure Pad - Incinerator	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
Occupied Structure Pad - Emergency Generator	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Tailpipe	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	0.53	0.53	0.53	0.53	0.56	0.58	0.57	0.57	0.57	0.56	0.56	0.57
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	1.67	1.67	1.34	1.34	1.37	1.38	1.37	1.37	1.38	1.36	1.36	1.37
Rolling 12 Month Sum (ton/year)	17.0											

Project: GMT2, Alternative C

Date: 7/25/2017

Project Emissions Summary - **VOC**

	Year 1			Year 2											
	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Construction															
Construction Camp Generators	---	---	0.50	1.89	1.51	1.51	1.51	1.01	0.50	0.50	0.63	0.50	---	0.38	0.50
Aircraft Activity	---	0.002	0.002	0.001	0.002	0.002	0.002	0.002	0.003	0.02	0.02	0.02	---	0.002	0.002
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	---	0.32	0.42	0.53	---	---	---	---	---	---	---	---	---	0.32	0.42
Gravel Roads and Pad Construction	---	---	---	---	1.30	1.30	1.30	---	---	---	0.14	0.11	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	0.11	0.14	0.11	0.11	0.03	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	0.07	0.07
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]															
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]															
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Road Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Ice Road Travel Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations															
Line Heater	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Occupied Structure Pad - Incinerator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Occupied Structure Pad - Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Interventions															
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	0	0.52	1.13	2.62	3.01	3.01	3.12	1.34	0.81	0.83	1.01	0.83	0	0.76	1.00
Rolling 12 Month Sum (ton/year)												18.2	18.2	18.5	18.3

	Year 3											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	1.26	1.01	1.01	1.01	1.01	0.50	0.50	0.63	0.50	0.50	0.13	---
Aircraft Activity	0.001	0.002	0.002	0.07	0.32	0.32	0.32	0.32	0.32	0.32	0.27	0.27
Pipeline Installation	---	0.26	0.26	0.26	0.13	---	---	---	---	---	---	---
Power Line Installation	---	0.01	0.03	0.03	0.01	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	0.02	0.02	0.004	---	---	---	---	---	---	---
Seasonal Ice Road Construction	0.53	0.42	---	---	---	---	---	---	---	---	0.32	0.42
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	0.23	0.29	0.23	0.23	0.29	0.23	0.23	0.29	0.23
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	0.11	0.09	0.04	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
Drilling Non-Mobile Support Equipment	---	---	---	---	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37
Kuukpik Supporting Pad Generators	---	---	---	---	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Drilling Mobile Equipment Tailpipe	---	---	---	---	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28
Infill Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Road Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Ice Road Travel Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	---	---	---	---	---	---	---	---	---	---	---	0.02
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	0.02
Occupied Structure Pad - Incinerator	---	---	---	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Occupied Structure Pad - Emergency Generator	---	---	---	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	0.62
Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	0.003
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	1.21
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	0.09
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	0.02
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	1.97	1.86	1.43	1.9	2.89	2.18	2.18	2.37	2.19	2.18	2.13	4.04
Rolling 12 Month Sum (ton/year)	17.7	16.5	15.0	13.7	15.3	16.7	18.0	19.4	20.7	22.9	24.3	27.3

	Year 4 - Year 10 (Routine Ops with Infill Drilling)											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	0.08	0.08	---	---	---	---	---	---	---	---	0.08	0.08
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]												
Drill Rigs	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
Drilling Non-Mobile Support Equipment	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37
Kuukpik Supporting Pad Generators	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Gravel Road Drilling Mobile Equipment Tailpipe	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Ice Road Travel Tailpipe	0.02	0.02	0.02	0.02	0.02	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Pigging Venting	---	---	---	---	---	0.04	---	---	---	---	---	---
Emergency Generator	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Occupied Structure Pad - Incinerator	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Occupied Structure Pad - Emergency Generator	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Fugitive Components	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62
Mobile Equipment Tailpipe	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	0.30	0.04	0.04	0.11	0.30	0.31	0.30	0.30	0.31	0.30	0.30	0.31
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	1.21
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	0.09
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	0.02
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	1.85	1.59	1.51	1.57	1.77	1.8	1.75	1.75	1.76	1.75	1.84	3.16
Rolling 12 Month Sum (ton/year)	22.1											

	Year 11 - Life of Wells (Routine Operations)											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	0.08	0.08	---	---	---	---	---	---	---	---	---	---
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Road Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Ice Road Travel Tailpipe	0.02	0.02	0.02	0.02	0.02	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Pigging Venting	---	---	---	---	---	0.04	---	---	---	---	---	---
Emergency Generator	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Occupied Structure Pad - Incinerator	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Occupied Structure Pad - Emergency Generator	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Fugitive Components	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62
Mobile Equipment Tailpipe	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	0.04	0.04	0.04	0.04	0.04	0.05	0.04	0.04	0.05	0.04	0.04	0.05
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	1.01	1.01	0.92	0.92	0.93	0.96	0.91	0.91	0.92	0.91	0.91	0.92
Rolling 12 Month Sum (ton/year)	11.2											

Project: GMT2, Alternative C

Date: 7/25/2017

Project Emissions Summary - **PM10**

	Year 1			Year 2											
	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Construction															
Construction Camp Generators	---	---	0.07	0.25	0.20	0.20	0.20	0.13	0.07	0.07	0.08	0.07	---	0.05	0.07
Aircraft Activity	---	7E-04	7E-04	4E-04	7E-04	7E-04	7E-04	7E-04	7E-04	2E-03	2E-03	2E-03	---	7E-04	7E-04
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	---	0.17	0.23	0.28	---	---	---	---	---	---	---	---	---	0.17	0.23
Gravel Roads and Pad Construction	---	---	---	---	0.82	0.82	0.82	---	---	---	0.06	0.05	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	0.09	0.12	0.09	0.09	0.02	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	0.06	0.06
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	3.39	3.39	3.39	3.39	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	67.5	67.5	67.5	67.5	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]															
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]															
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Road Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Ice Road Travel Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations															
Line Heater	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Occupied Structure Pad - Incinerator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Occupied Structure Pad - Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Interventions															
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	0	0.35	0.47	0.71	1.2	1.2	1.29	0.43	71.2	71.2	71.2	71.1	0	0.28	0.35
Rolling 12 Month Sum (ton/year)												290	290	290	290

	Year 3											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	0.16	0.13	0.13	0.13	0.13	0.07	0.07	0.08	0.07	0.07	0.02	---
Aircraft Activity	4E-04	7E-04	7E-04	8E-03	3E-02	3E-02	3E-02	3E-02	4E-02	3E-02	3E-02	3E-02
Pipeline Installation	---	0.15	0.15	0.15	0.08	---	---	---	---	---	---	---
Power Line Installation	---	0.01	0.02	0.02	0.01	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	0.02	0.02	0.004	---	---	---	---	---	---	---
Seasonal Ice Road Construction	0.28	0.23	---	---	---	---	---	---	---	---	0.17	0.23
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	0.20	0.25	0.20	0.20	0.25	0.20	0.20	0.25	0.20
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	0.07	0.06	0.03	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Construction Fugitive Emissions	---	---	---	---	---	3.39	3.39	3.39	3.39	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	11.9	11.9	11.9	11.9	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Drilling Non-Mobile Support Equipment	---	---	---	---	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
Kuukpik Supporting Pad Generators	---	---	---	---	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Drilling Mobile Equipment Tailpipe	---	---	---	---	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	0.34	0.34	0.34	0.34	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	0	0	0	0	0	0	0	0
Infill Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Road Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Ice Road Travel Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	---	---	---	---	---	---	---	---	---	---	---	0.03
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	0.01
Occupied Structure Pad - Incinerator	---	---	---	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29
Occupied Structure Pad - Emergency Generator	---	---	---	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	0.002
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	0.62
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	0.05
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	0.02
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	0.58	0.64	0.41	0.89	1.21	16.6	16.6	16.7	16.6	1.01	1.17	1.89
Rolling 12 Month Sum (ton/year)	290	289	289	288	289	234	180	125	70.9	71.9	72.8	74.4

	Year 4 - Year 10 (Routine Ops with Infill Drilling)											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	0.05	0.05	---	---	---	---	---	---	---	---	0.05	0.05
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]												
Drill Rigs	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Drilling Non-Mobile Support Equipment	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
Kuukpik Supporting Pad Generators	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Gravel Road Drilling Mobile Equipment Tailpipe	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Ice Road Travel Tailpipe	0.01	0.01	0.01	0.01	0.01	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	6.40	6.40	6.40	6.40	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Occupied Structure Pad - Incinerator	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29
Occupied Structure Pad - Emergency Generator	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Tailpipe	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
Mobile Equipment Fugitive Dust	---	---	---	---	---	2.28	2.28	2.28	2.28	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	3.39	3.39	3.39	3.39	---	---	---
Aircraft Activity	0.03	0.01	0.01	0.01	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	0.62
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	0.05
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	0.02
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	0.78	0.76	0.72	0.72	0.74	12.8	12.8	12.8	12.8	0.73	0.77	1.46
Rolling 12 Month Sum (ton/year)	57.9											

	Year 11 - Life of Wells (Routine Operations)											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	0.05	0.05	---	---	---	---	---	---	---	---	---	---
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Road Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Ice Road Travel Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Occupied Structure Pad - Incinerator	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29
Occupied Structure Pad - Emergency Generator	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Tailpipe	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
Mobile Equipment Fugitive Dust	---	---	---	---	---	2.28	2.28	2.28	2.28	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	3.39	3.39	3.39	3.39	---	---	---
Aircraft Activity	0.004	0.004	0.004	0.004	0.005	0.006	0.005	0.005	0.006	0.005	0.005	0.006
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	0.38	0.38	0.34	0.34	0.34	6.01	6.01	6.01	6.01	0.34	0.34	0.34
Rolling 12 Month Sum (ton/year)	26.9											

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Project: GMT2, Alternative C

Date: 7/25/2017

Project Emissions Summary - **PM2.5**

	Year 1			Year 2											
	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Construction															
Construction Camp Generators	---	---	0.07	0.25	0.20	0.20	0.20	0.13	0.07	0.07	0.08	0.07	---	0.05	0.07
Aircraft Activity	---	7E-04	7E-04	4E-04	7E-04	7E-04	7E-04	7E-04	7E-04	2E-03	2E-03	2E-03	---	7E-04	7E-04
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	---	0.16	0.22	0.27	---	---	---	---	---	---	---	---	---	0.16	0.22
Gravel Roads and Pad Construction	---	---	---	---	0.79	0.79	0.79	---	---	---	0.06	0.05	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	0.09	0.11	0.09	0.09	0.02	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	0.03	0.03
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	0.51	0.51	0.51	0.51	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	6.75	6.75	6.75	6.75	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]															
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]															
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Road Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Ice Road Travel Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations															
Line Heater	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Occupied Structure Pad - Incinerator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Occupied Structure Pad - Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Interventions															
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	0	0.25	0.37	0.6	1.07	1.07	1.16	0.33	7.49	7.49	7.50	7.45	0	0.24	0.31
Rolling 12 Month Sum (ton/year)												34.8	34.8	34.8	34.7

	Year 3											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	0.16	0.13	0.13	0.13	0.13	0.07	0.07	0.08	0.07	0.07	0.02	---
Aircraft Activity	4E-04	7E-04	7E-04	8E-03	3E-02	3E-02	3E-02	3E-02	4E-02	3E-02	3E-02	3E-02
Pipeline Installation	---	0.15	0.15	0.15	0.07	---	---	---	---	---	---	---
Power Line Installation	---	0.01	0.02	0.02	0.01	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	0.02	0.02	0.004	---	---	---	---	---	---	---
Seasonal Ice Road Construction	0.27	0.22	---	---	---	---	---	---	---	---	0.16	0.22
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	0.19	0.24	0.19	0.19	0.24	0.19	0.19	0.24	0.19
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	0.07	0.05	0.03	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Construction Fugitive Emissions	---	---	---	---	---	0.51	0.51	0.51	0.51	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	1.19	1.19	1.19	1.19	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
Drilling Non-Mobile Support Equipment	---	---	---	---	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Kuukpik Supporting Pad Generators	---	---	---	---	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Drilling Mobile Equipment Tailpipe	---	---	---	---	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	0.03	0.03	0.03	0.03	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	0	0	0	0	0	0	0	0
Infill Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Road Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Ice Road Travel Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	---	---	---	---	---	---	---	---	---	---	---	0.03
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	0.01
Occupied Structure Pad - Incinerator	---	---	---	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29
Occupied Structure Pad - Emergency Generator	---	---	---	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	0.001
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	0.61
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	0.05
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	0.01
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	0.53	0.59	0.37	0.84	1.14	2.66	2.66	2.73	2.67	0.94	1.09	1.8
Rolling 12 Month Sum (ton/year)	34.6	34.2	33.5	33.1	34	29.1	24.3	19.5	14.7	15.7	16.5	18.0

	Year 4 - Year 10 (Routine Ops with Infill Drilling)											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	0.04	0.04	---	---	---	---	---	---	---	---	0.04	0.04
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]												
Drill Rigs	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
Drilling Non-Mobile Support Equipment	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Kuukpik Supporting Pad Generators	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Gravel Road Drilling Mobile Equipment Tailpipe	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Ice Road Travel Tailpipe	0.01	0.01	0.01	0.01	0.01	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	0.64	0.64	0.64	0.64	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Occupied Structure Pad - Incinerator	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29
Occupied Structure Pad - Emergency Generator	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Tailpipe	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Mobile Equipment Fugitive Dust	---	---	---	---	---	0.23	0.23	0.23	0.23	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	0.51	0.51	0.51	0.51	---	---	---
Aircraft Activity	0.03	0.01	0.01	0.01	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	0.61
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	0.05
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	0.01
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	0.75	0.72	0.68	0.68	0.70	2.08	2.08	2.08	2.08	0.70	0.74	1.41
Rolling 12 Month Sum (ton/year)	14.7											

	Year 11 - Life of Wells (Routine Operations)											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	0.04	0.04	---	---	---	---	---	---	---	---	---	---
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Road Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Ice Road Travel Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Occupied Structure Pad - Incinerator	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29
Occupied Structure Pad - Emergency Generator	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Tailpipe	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Mobile Equipment Fugitive Dust	---	---	---	---	---	0.23	0.23	0.23	0.23	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	0.51	0.51	0.51	0.51	---	---	---
Aircraft Activity	0.004	0.004	0.004	0.004	0.005	0.01	0.01	0.005	0.01	0.01	0.005	0.01
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	0.38	0.38	0.34	0.34	0.34	1.08	1.08	1.08	1.08	0.34	0.34	0.34
Rolling 12 Month Sum (ton/year)	7.12											

Project: GMT2, Alternative C

Date: 7/25/2017

Project Emissions Summary - **SO2**

	Year 1			Year 2											
	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Construction															
Construction Camp Generators	---	---	1.E-03	5.E-03	4.E-03	4.E-03	4.E-03	2.E-03	1.E-03	1.E-03	2.E-03	1.E-03	---	9.E-04	1.E-03
Aircraft Activity	---	2.E-03	2.E-03	8.E-04	2.E-03	2.E-03	2.E-03	4.E-03	9.E-03	1.E-02	1.E-02	9.E-03	---	2.E-03	2.E-03
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	---	4.E-03	5.E-03	6.E-03	---	---	---	---	---	---	---	---	---	4.E-03	5.E-03
Gravel Roads and Pad Construction	---	---	---	---	2.E-02	2.E-02	2.E-02	---	---	---	2.E-03	2.E-03	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	3.E-03	4.E-03	3.E-03	3.E-03	8.E-04	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	4.E-03	4.E-03	4.E-03	4.E-03	4.E-03	4.E-03	4.E-03	4.E-03	4.E-03	4.E-03	4.E-03	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	1.E-03	1.E-03
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]															
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]															
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Road Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Ice Road Travel Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations															
Line Heater	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Occupied Structure Pad - Incinerator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Occupied Structure Pad - Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Interventions															
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	0	0.01	0.01	0.02	0.03	0.03	0.04	0.01	0.02	0.02	0.02	0.02	0	0.01	0.01
Rolling 12 Month Sum (ton/year)												0.23	0.23	0.23	0.22

	Year 3											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	3.E-03	2.E-03	2.E-03	2.E-03	2.E-03	1.E-03	1.E-03	2.E-03	1.E-03	1.E-03	3.E-04	---
Aircraft Activity	8.E-04	2.E-03	2.E-03	9.E-03	3.E-02	4.E-02	4.E-02	4.E-02	4.E-02	3.E-02	3.E-02	3.E-02
Pipeline Installation	---	5.E-03	5.E-03	5.E-03	3.E-03	---	---	---	---	---	---	---
Power Line Installation	---	5.E-04	9.E-04	9.E-04	5.E-04	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	8.E-04	8.E-04	2.E-04	---	---	---	---	---	---	---
Seasonal Ice Road Construction	6.E-03	5.E-03	---	---	---	---	---	---	---	---	4.E-03	5.E-03
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	6.E-03	8.E-03	6.E-03	6.E-03	8.E-03	6.E-03	6.E-03	8.E-03	6.E-03
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	1.E-03	1.E-03	6.E-04	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02
Drilling Non-Mobile Support Equipment	---	---	---	---	6.E-03	6.E-03	6.E-03	6.E-03	6.E-03	6.E-03	6.E-03	6.E-03
Kuukpik Supporting Pad Generators	---	---	---	---	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03
Drilling Mobile Equipment Tailpipe	---	---	---	---	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03
Infill Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Road Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Ice Road Travel Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	---	---	---	---	---	---	---	---	---	---	---	2.E-02
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	7E-04
Occupied Structure Pad - Incinerator	---	---	---	2E-03	2E-03	2E-03	2E-03	2E-03	2E-03	2E-03	2E-03	2E-03
Occupied Structure Pad - Emergency Generator	---	---	---	7E-04	7E-04	7E-04	7E-04	7E-04	7E-04	7E-04	7E-04	7E-04
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	5.E-05
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	2.E-02
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	2.E-03
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	5.E-04
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	0.01	0.02	0.01	0.03	0.07	0.07	0.07	0.07	0.07	0.06	0.07	0.11
Rolling 12 Month Sum (ton/year)	0.22	0.20	0.18	0.18	0.23	0.28	0.33	0.38	0.44	0.50	0.56	0.66

	Year 4 - Year 10 (Routine Ops with Infill Drilling)											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	1.E-03	1E-03	---	---	---	---	---	---	---	---	1.E-03	1.E-03
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]												
Drill Rigs	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02
Drilling Non-Mobile Support Equipment	6.E-03	6.E-03	6.E-03	6.E-03	6.E-03	6.E-03	6.E-03	6.E-03	6.E-03	6.E-03	6.E-03	6.E-03
Kuukpik Supporting Pad Generators	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03
Gravel Road Drilling Mobile Equipment Tailpipe	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04
Ice Road Travel Tailpipe	3E-04	3E-04	3E-04	3E-04	3E-04	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	7E-04	7E-04	7E-04	7E-04	7E-04	7E-04	7E-04	7E-04	7E-04	7E-04	7E-04	7E-04
Occupied Structure Pad - Incinerator	2E-03	2E-03	2E-03	2E-03	2E-03	2E-03	2E-03	2E-03	2E-03	2E-03	2E-03	2E-03
Occupied Structure Pad - Emergency Generator	7E-04	7E-04	7E-04	7E-04	7E-04	7E-04	7E-04	7E-04	7E-04	7E-04	7E-04	7E-04
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Tailpipe	5.E-05	5.E-05	5.E-05	5.E-05	5.E-05	5.E-05	5.E-05	5.E-05	5.E-05	5.E-05	5.E-05	5.E-05
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	3.E-02	8.E-03	8.E-03	1.E-02	3.E-02	3.E-02	3.E-02	3.E-02	3.E-02	3.E-02	3.E-02	3.E-02
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	2.E-02
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	2.E-03
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	5.E-04
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	0.07	0.05	0.05	0.05	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.1
Rolling 12 Month Sum (ton/year)	0.79											

	Year 11 - Life of Wells (Routine Operations)											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	1.E-03	1E-03	---	---	---	---	---	---	---	---	---	---
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Road Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Ice Road Travel Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	7E-04	7E-04	7E-04	7E-04	7E-04	7E-04	7E-04	7E-04	7E-04	7E-04	7E-04	7E-04
Occupied Structure Pad - Incinerator	2E-03	2E-03	2E-03	2E-03	2E-03	2E-03	2E-03	2E-03	2E-03	2E-03	2E-03	2E-03
Occupied Structure Pad - Emergency Generator	7E-04	7E-04	7E-04	7E-04	7E-04	7E-04	7E-04	7E-04	7E-04	7E-04	7E-04	7E-04
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Tailpipe	5.E-05	5.E-05	5.E-05	5.E-05	5.E-05	5.E-05	5.E-05	5.E-05	5.E-05	5.E-05	5.E-05	5.E-05
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	3E-03	3E-03	3E-03	3E-03	7E-03	1E-02	7E-03	7E-03	9E-03	6E-03	5E-03	8E-03
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Rolling 12 Month Sum (ton/year)	0.31											

Project: GMT2, Alternative C

Date: 7/25/2017

Project Emissions Summary - CO2e

	Year 1			Year 2											
	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Construction															
Construction Camp Generators	---	---	229	860	688	688	688	459	229	229	287	229	---	172	229
Aircraft Activity	---	3.97	3.97	1.99	3.97	3.97	3.97	9.9	24.4	26.8	30.3	23.1	---	3.97	3.97
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	---	676	902	1,127	---	---	---	---	---	---	---	---	---	676	902
Gravel Roads and Pad Construction	---	---	---	---	5,196	5,196	5,196	---	---	---	405	324	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	876	1,095	876	876	219	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	490	490	490	490	490	490	490	490	490	490	490	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	165	165
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]															
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]															
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Road Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Ice Road Travel Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations															
Line Heater	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Occupied Structure Pad - Incinerator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Occupied Structure Pad - Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Interventions															
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	0	1,170	1,625	2,479	6,377	6,377	7,253	2,053	1,619	1,622	1,430	1,066	0	1,017	1,300
Rolling 12 Month Sum (ton/year)												33,072	33,072	32,919	32,595

	Year 3											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	573	459	459	459	459	229	229	287	229	229	57.3	---
Aircraft Activity	1.99	3.97	3.97	24.2	90.0	100	98.9	102	101	85.8	78.7	85.5
Pipeline Installation	---	1,245	1,245	1,245	622	---	---	---	---	---	---	---
Power Line Installation	---	131	261	261	131	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	233	233	58.3	---	---	---	---	---	---	---
Seasonal Ice Road Construction	1,127	902	---	---	---	---	---	---	---	---	676	902
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	1,875	2,343	1,875	1,875	2,343	1,875	1,875	2,343	1,875
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	248	199	99	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	165	165	165	165	165	165	165	165	165	165	165	165
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	1,114	1,114	1,114	1,114	1,114	1,114	1,114	1,114
Drilling Non-Mobile Support Equipment	---	---	---	---	647	647	647	647	647	647	647	647
Kuukpik Supporting Pad Generators	---	---	---	---	197	197	197	197	197	197	197	197
Drilling Mobile Equipment Tailpipe	---	---	---	---	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	70.5	70.5	70.5	70.5	70.5	70.5	70.5	70.5
Infill Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Road Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Ice Road Travel Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	---	---	---	---	---	---	---	---	---	---	---	385
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	32.3
Occupied Structure Pad - Incinerator	---	---	---	297	297	297	297	297	297	297	297	297
Occupied Structure Pad - Emergency Generator	---	---	---	32.0	32.0	32.0	32.0	32.0	32.0	32.0	32.0	32.0
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	53.9
Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	6.41
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	2,264
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	189
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	58.7
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	2,116	3,103	2,466	4,590	6,245	4,746	4,744	5,273	4,747	4,731	5,697	8,392
Rolling 12 Month Sum (ton/year)	32,231	28,957	25,046	22,382	26,574	29,700	32,823	36,666	40,347	45,078	49,758	56,851

	Year 4 - Year 10 (Routine Ops with Infill Drilling)											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	181	181	---	---	---	---	---	---	---	---	181	181
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]												
Drill Rigs	1,114	1,114	1,114	1,114	1,114	1,114	1,114	1,114	1,114	1,114	1,114	1,114
Drilling Non-Mobile Support Equipment	647	647	647	647	647	647	647	647	647	647	647	647
Kuukpik Supporting Pad Generators	197	197	197	197	197	197	197	197	197	197	197	197
Gravel Road Drilling Mobile Equipment Tailpipe	58.7	58.7	58.7	58.7	58.7	58.7	58.7	58.7	58.7	58.7	58.7	58.7
Ice Road Travel Tailpipe	36.4	36.4	36.4	36.4	36.4	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	385	385	385	385	385	385	385	385	385	385	385	385
Pigging Venting	---	---	---	---	---	4.12	---	---	---	---	---	---
Emergency Generator	32.3	32.3	32.3	32.3	32.3	32.3	32.3	32.3	32.3	32.3	32.3	32.3
Occupied Structure Pad - Incinerator	297	297	297	297	297	297	297	297	297	297	297	297
Occupied Structure Pad - Emergency Generator	32.0	32.0	32.0	32.0	32.0	32.0	32.0	32.0	32.0	32.0	32.0	32.0
Fugitive Components	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9
Mobile Equipment Tailpipe	6.41	6.41	6.41	6.41	6.41	6.41	6.41	6.41	6.41	6.41	6.41	6.41
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	69.4	22.1	22.1	38.8	78.9	87.5	80.3	79.6	84.7	76.2	75.8	82.6
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	2,264
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	189
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	58.7
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	3,109	3,061	2,881	2,898	2,938	2,914	2,903	2,902	2,907	2,899	3,079	5,597
Rolling 12 Month Sum (ton/year)	38,087											

	Year 11 - Life of Wells (Routine Operations)											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	181	181	---	---	---	---	---	---	---	---	---	---
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Road Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Ice Road Travel Tailpipe	36.4	36.4	36.4	36.4	36.4	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	385	385	385	385	385	385	385	385	385	385	385	385
Pigging Venting	---	---	---	---	---	4.12	---	---	---	---	---	---
Emergency Generator	32.3	32.3	32.3	32.3	32.3	32.3	32.3	32.3	32.3	32.3	32.3	32.3
Occupied Structure Pad - Incinerator	297	297	297	297	297	297	297	297	297	297	297	297
Occupied Structure Pad - Emergency Generator	32.0	32.0	32.0	32.0	32.0	32.0	32.0	32.0	32.0	32.0	32.0	32.0
Fugitive Components	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9
Mobile Equipment Tailpipe	6.41	6.41	6.41	6.41	6.41	6.41	6.41	6.41	6.41	6.41	6.41	6.41
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	8.19	8.19	8.19	8.59	17.7	26.3	19.0	18.4	23.5	14.9	14.5	21.4
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	1,031	1,031	850	851	860	836	825	824	829	821	820	827
Rolling 12 Month Sum (ton/year)	10,406											

Project: GMT2, Alternative C

Date: 7/25/2017

Project Emissions Summary - **Total HAPs**

	Year 1			Year 2											
	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Construction															
Construction Camp Generators	---	---	4.E-03	1.E-02	1.E-02	1.E-02	1.E-02	8.E-03	4.E-03	4.E-03	5.E-03	4.E-03	---	3.E-03	4.E-03
Aircraft Activity	---	2.E-04	2.E-04	1.E-04	2.E-04	2.E-04	2.E-04	3.E-04	5.E-04	3.E-03	3.E-03	3.E-03	---	2.E-04	2.E-04
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	---	1.E-01	1.E-01	2.E-01	---	---	---	---	---	---	---	---	---	1.E-01	1.E-01
Gravel Roads and Pad Construction	---	---	---	---	4.E-01	4.E-01	4.E-01	---	---	---	5.E-02	4.E-02	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	3.E-02	4.E-02	3.E-02	3.E-02	9.E-03	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	3.E-02	3.E-02	3.E-02	3.E-02	3.E-02	3.E-02	3.E-02	3.E-02	3.E-02	3.E-02	3.E-02	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	9.E-03	9.E-03
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]															
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]															
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Road Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Ice Road Travel Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations															
Line Heater	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Occupied Structure Pad - Incinerator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Occupied Structure Pad - Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Interventions															
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	0.E+00	1.E-01	2.E-01	2.E-01	5.E-01	5.E-01	5.E-01	8.E-02	7.E-02	7.E-02	9.E-02	7.E-02	0.E+00	1.E-01	1.E-01
Rolling 12 Month Sum (ton/year)												2.35	2.35	2.34	2.32

	Year 3											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	1.E-02	8.E-03	8.E-03	8.E-03	8.E-03	4.E-03	4.E-03	5.E-03	4.E-03	4.E-03	1.E-03	---
Aircraft Activity	1.E-04	2.E-04	2.E-04	1.E-02	6.E-02	6.E-02	6.E-02	6.E-02	6.E-02	6.E-02	5.E-02	5.E-02
Pipeline Installation	---	9.E-02	9.E-02	9.E-02	4.E-02	---	---	---	---	---	---	---
Power Line Installation	---	5.E-03	9.E-03	9.E-03	5.E-03	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	6.E-03	6.E-03	1.E-03	---	---	---	---	---	---	---
Seasonal Ice Road Construction	2.E-01	1.E-01	---	---	---	---	---	---	---	---	1.E-01	1.E-01
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	7.E-02	9.E-02	7.E-02	7.E-02	9.E-02	7.E-02	7.E-02	9.E-02	7.E-02
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	4.E-02	3.E-02	1.E-02	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	9.E-03	9.E-03	9.E-03	9.E-03	9.E-03	9.E-03	9.E-03	9.E-03	9.E-03	9.E-03	9.E-03	9.E-03
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02
Drilling Non-Mobile Support Equipment	---	---	---	---	4.E-03	4.E-03	4.E-03	4.E-03	4.E-03	4.E-03	4.E-03	4.E-03
Kuukpik Supporting Pad Generators	---	---	---	---	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03
Drilling Mobile Equipment Tailpipe	---	---	---	---	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Road Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Ice Road Travel Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	---	---	---	---	---	---	---	---	---	---	---	2.E-03
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	3.E-04
Occupied Structure Pad - Incinerator	---	---	---	2E-03	2E-03	2E-03	2E-03	2E-03	2E-03	2E-03	2E-03	2E-03
Occupied Structure Pad - Emergency Generator	---	---	---	3E-04	3E-04	3E-04	3E-04	3E-04	3E-04	3E-04	3E-04	3E-04
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	5E-04
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	2.E-02
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	1.E-03
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	3.E-03
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	2.E-01	3.E-01	1.E-01	2.E-01	2.E-01	2.E-01	2.E-01	2.E-01	2.E-01	2.E-01	3.E-01	3.E-01
Rolling 12 Month Sum (ton/year)	2.33	2.13	1.78	1.48	1.64	1.74	1.83	1.93	2.03	2.19	2.35	2.52

	Year 4 - Year 10 (Routine Ops with Infill Drilling)											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	3.E-02	---	---	---	---	---	---	---	---	---	3.E-02	3.E-02
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]												
Drill Rigs	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02
Drilling Non-Mobile Support Equipment	4.E-03	4.E-03	4.E-03	4.E-03	4.E-03	4.E-03	4.E-03	4.E-03	4.E-03	4.E-03	4.E-03	4.E-03
Kuukpik Supporting Pad Generators	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03
Gravel Road Drilling Mobile Equipment Tailpipe	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03
Ice Road Travel Tailpipe	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04
Occupied Structure Pad - Incinerator	2E-03	2E-03	2E-03	2E-03	2E-03	2E-03	2E-03	2E-03	2E-03	2E-03	2E-03	2E-03
Occupied Structure Pad - Emergency Generator	3E-04	3E-04	3E-04	3E-04	3E-04	3E-04	3E-04	3E-04	3E-04	3E-04	3E-04	3E-04
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Tailpipe	5E-04	5E-04	5E-04	5E-04	5E-04	5E-04	5E-04	5E-04	5E-04	5E-04	5E-04	5E-04
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	5.E-02	8.E-03	8.E-03	2.E-02	5.E-02	5.E-02	5.E-02	5.E-02	5.E-02	5.E-02	5.E-02	5.E-02
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	2.E-02
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	1.E-03
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	3.E-03
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	1.E-01	4.E-02	4.E-02	5.E-02	8.E-02	8.E-02	8.E-02	8.E-02	8.E-02	8.E-02	1.E-01	1.E-01
Rolling 12 Month Sum (ton/year)	0.97											

	Year 11 - Life of Wells (Routine Operations)											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	3.E-02	---	---	---	---	---	---	---	---	---	---	---
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Road Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Ice Road Travel Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04
Occupied Structure Pad - Incinerator	2E-03	2E-03	2E-03	2E-03	2E-03	2E-03	2E-03	2E-03	2E-03	2E-03	2E-03	2E-03
Occupied Structure Pad - Emergency Generator	3E-04	3E-04	3E-04	3E-04	3E-04	3E-04	3E-04	3E-04	3E-04	3E-04	3E-04	3E-04
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Tailpipe	5E-04	5E-04	5E-04	5E-04	5E-04	5E-04	5E-04	5E-04	5E-04	5E-04	5E-04	5.E-04
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	7.E-03	7.E-03	7.E-03	7.E-03	7.E-03	8.E-03	7.E-03	7.E-03	8.E-03	7.E-03	7.E-03	8.E-03
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	4.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02
Rolling 12 Month Sum (ton/year)	0.18											

Project: GMT2, Alternative C

Date: 7/25/2017

Project Emissions Summary - **Benzene**

	Year 1			Year 2												Year 3											
	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Construction																											
Construction Camp Generators	---	---	1.E-03	5.E-03	4.E-03	4.E-03	4.E-03	3.E-03	1.E-03	1.E-03	2.E-03	1.E-03	---	1.E-03	1.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	1.E-03	1.E-03	2.E-03	1.E-03	1.E-03	3.E-04	---
Aircraft Activity	---	2.E-05	2.E-05	1.E-05	2.E-05	2.E-05	2.E-05	3.E-05	5.E-05	3.E-04	3.E-04	3.E-04	---	2.E-05	2.E-05	1.E-05	2.E-05	2.E-05	1.E-03	6.E-03	6.E-03	6.E-03	6.E-03	6.E-03	6.E-03	5.E-03	5.E-03
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	8.E-03	8.E-03	8.E-03	4.E-03	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	4.E-04	8.E-04	8.E-04	4.E-04	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	5.E-04	5.E-04	1.E-04	---	---	---	---	---	---	---
Seasonal Ice Road Construction	---	8.E-03	1.E-02	1.E-02	---	---	---	---	---	---	---	---	---	8.E-03	1.E-02	1.E-02	1.E-02	---	---	---	---	---	---	---	---	8.E-03	1.E-02
Gravel Roads and Pad Construction	---	---	---	---	4.E-02	4.E-02	4.E-02	---	---	---	4.E-03	3.E-03	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	7.E-03	8.E-03	7.E-03	7.E-03	8.E-03	7.E-03	7.E-03	8.E-03	7.E-03
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	3.E-03	4.E-03	3.E-03	3.E-03	8.E-04	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	3.E-03	3.E-03	1.E-03	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]																											
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	8.E-04	8.E-04	8.E-04	8.E-04	8.E-04	8.E-04	8.E-04	8.E-04
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	7.E-05	7.E-05	7.E-05	7.E-05	7.E-05	7.E-05	7.E-05	7.E-05
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05
Infill Drilling [1]																											
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Road Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Ice Road Travel Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations																											
Line Heater	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	2.E-06
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	2E-04
Occupied Structure Pad - Incinerator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06
Occupied Structure Pad - Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	3.E-04
Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	3.E-05
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Interventions																											
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.E-02
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	5.E-04
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	2.E-04
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	0.E+00	1.E-02	1.E-02	2.E-02	4.E-02	4.E-02	5.E-02	8.E-03	6.E-03	7.E-03	8.E-03	6.E-03	0.E+00	9.E-03	1.E-02	2.E-02	2.E-02	1.E-02	2.E-02	3.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	3.E-02	4.E-02
Rolling 12 Month Sum (ton/year)												0.22	0.22	0.21	0.21	0.21	0.19	0.16	0.14	0.15	0.17	0.18	0.19	0.20	0.22	0.24	0.27

	Year 4 - Year 10 (Routine Ops with Infill Drilling)												Year 11 - Life of Wells (Routine Operations)											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Construction																								
Construction Camp Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	2.E-03	2E-03	---	---	---	---	---	---	---	---	2.E-03	2.E-03	2.E-03	2E-03	---	---	---	---	---	---	---	---	---	---
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]																								
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]																								
Drill Rigs	8.E-04	8.E-04	8.E-04	8.E-04	8.E-04	8.E-04	8.E-04	8.E-04	8.E-04	8.E-04	8.E-04	8.E-04	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Road Drilling Mobile Equipment Tailpipe	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	---	---	---	---	---	---	---	---	---	---	---	---
Ice Road Travel Tailpipe	1.E-04	1.E-04	1.E-04	1.E-04	1.E-04	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations																								
Line Heater	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06
Pigging Venting	---	---	---	---	---	9.E-06	---	---	---	---	---	---	---	---	---	---	---	9.E-06	---	---	---	---	---	---
Emergency Generator	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04
Occupied Structure Pad - Incinerator	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06
Occupied Structure Pad - Emergency Generator	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04	2E-04
Fugitive Components	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04
Mobile Equipment Tailpipe	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	6.E-03	8.E-04	8.E-04	2.E-03	6.E-03	6.E-03	6.E-03	6.E-03	6.E-03	6.E-03	6.E-03	6.E-03	8.E-04	8.E-04	8.E-04	8.E-04	8.E-04	9.E-04	8.E-04	8.E-04	9.E-04	8.E-04	8.E-04	9.E-04
Well Interventions																								
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	1.E-02	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	5.E-04	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	2.E-04	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	1.E-02	8.E-03	6.E-03	7.E-03	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	2.E-02	3.E-03	3.E-03	1.E-03	1.E-03	1.E-03	2.E-03	1.E-03	1.E-03	2.E-03	1.E-03	1.E-03	2.E-03
Rolling 12 Month Sum (ton/year)	0.13												0.021											

Project: GMT2, Alternative C

Date: 7/25/2017

Project Emissions Summary - **Toluene**

	Year 1			Year 2											
	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Construction															
Construction Camp Generators	---	---	6.E-04	2.E-03	2.E-03	2.E-03	2.E-03	1.E-03	6.E-04	6.E-04	7.E-04	6.E-04	---	4.E-04	6.E-04
Aircraft Activity	---	9.E-06	9.E-06	5.E-06	9.E-06	9.E-06	9.E-06	1.E-05	2.E-05	1.E-04	1.E-04	1.E-04	---	9.E-06	9.E-06
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	---	9.E-03	1.E-02	1.E-02	---	---	---	---	---	---	---	---	---	9.E-03	1.E-02
Gravel Roads and Pad Construction	---	---	---	---	4.E-02	4.E-02	4.E-02	---	---	---	4.E-03	3.E-03	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	3.E-03	3.E-03	3.E-03	3.E-03	7.E-04	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	6.E-04	6.E-04
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]															
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]															
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Road Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Ice Road Travel Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations															
Line Heater	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Occupied Structure Pad - Incinerator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Occupied Structure Pad - Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Interventions															
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	0.E+00	1.E-02	1.E-02	2.E-02	4.E-02	4.E-02	5.E-02	6.E-03	5.E-03	5.E-03	8.E-03	6.E-03	0.E+00	1.E-02	1.E-02
Rolling 12 Month Sum (ton/year)												0.21	0.21	0.20	0.20

	Year 3											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	6.E-04	6.E-04	7.E-04	6.E-04	6.E-04	1.E-04	---
Aircraft Activity	5.E-06	9.E-06	9.E-06	5.E-04	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03
Pipeline Installation	---	8.E-03	8.E-03	8.E-03	4.E-03	---	---	---	---	---	---	---
Power Line Installation	---	4.E-04	8.E-04	8.E-04	4.E-04	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	4.E-04	4.E-04	1.E-04	---	---	---	---	---	---	---
Seasonal Ice Road Construction	1.E-02	1.E-02	---	---	---	---	---	---	---	---	9.E-03	1.E-02
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	6.E-03	7.E-03	6.E-03	6.E-03	7.E-03	6.E-03	6.E-03	7.E-03	6.E-03
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	3.E-03	2.E-03	1.E-03	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04
Drilling Non-Mobile Support Equipment	---	---	---	---	8.E-04	8.E-04	8.E-04	8.E-04	8.E-04	8.E-04	8.E-04	8.E-04
Kuukpik Supporting Pad Generators	---	---	---	---	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04
Drilling Mobile Equipment Tailpipe	---	---	---	---	7.E-05	7.E-05	7.E-05	7.E-05	7.E-05	7.E-05	7.E-05	7.E-05
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05
Infill Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Road Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Ice Road Travel Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	---	---	---	---	---	---	---	---	---	---	---	4.E-06
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	6E-05
Occupied Structure Pad - Incinerator	---	---	---	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06
Occupied Structure Pad - Emergency Generator	---	---	---	5E-05	5E-05	5E-05	5E-05	5E-05	5E-05	5E-05	5E-05	5E-05
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	1.E-03
Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	3.E-05
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	4.E-03
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	2.E-04
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	2.E-04
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	2.E-02	2.E-02	1.E-02	2.E-02	2.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	2.E-02	3.E-02
Rolling 12 Month Sum (ton/year)	0.20	0.19	0.15	0.13	0.14	0.14	0.15	0.15	0.16	0.17	0.18	0.20

	Year 4 - Year 10 (Routine Ops with Infill Drilling)												Year 11 - Life of Wells (Routine Operations)											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Construction																								
Construction Camp Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	2.E-03	2E-03	---	---	---	---	---	---	---	---	2.E-03	2.E-03	2.E-03	2E-03	---	---	---	---	---	---	---	---	---	---
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]																								
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]																								
Drill Rigs	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	8.E-04	8.E-04	8.E-04	8.E-04	8.E-04	8.E-04	8.E-04	8.E-04	8.E-04	8.E-04	8.E-04	8.E-04	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Road Drilling Mobile Equipment Tailpipe	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	---	---	---	---	---	---	---	---	---	---	---	---
Ice Road Travel Tailpipe	1.E-04	1.E-04	1.E-04	1.E-04	1.E-04	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations																								
Line Heater	4.E-06	4.E-06	4.E-06	4.E-06	4.E-06	4.E-06	4.E-06	4.E-06	4.E-06	4.E-06	4.E-06	4.E-06	4.E-06	4.E-06	4.E-06	4.E-06	4.E-06	4.E-06	4.E-06	4.E-06	4.E-06	4.E-06	4.E-06	4.E-06
Pigging Venting	---	---	---	---	---	1.E-05	---	---	---	---	---	---	---	---	---	---	---	1.E-05	---	---	---	---	---	---
Emergency Generator	6E-05	6E-05	6E-05	6E-05	6E-05	6E-05	6E-05	6E-05	6E-05	6E-05	6E-05	6E-05	6E-05	6E-05	6E-05	6E-05	6E-05	6E-05	6E-05	6E-05	6E-05	6E-05	6E-05	6E-05
Occupied Structure Pad - Incinerator	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06
Occupied Structure Pad - Emergency Generator	5E-05	5E-05	5E-05	5E-05	5E-05	5E-05	5E-05	5E-05	5E-05	5E-05	5E-05	5E-05	5E-05	5E-05	5E-05	5E-05	5E-05	5E-05	5E-05	5E-05	5E-05	5E-05	5E-05	5E-05
Fugitive Components	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03
Mobile Equipment Tailpipe	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	2.E-03	3.E-04	3.E-04	8.E-04	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04
Well Interventions																								
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	4.E-03	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	2.E-04	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	2.E-04	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	8.E-03	6.E-03	4.E-03	4.E-03	6.E-03	6.E-03	5.E-03	5.E-03	6.E-03	5.E-03	8.E-03	1.E-02	4.E-03	4.E-03	1.E-03	1.E-03	1.E-03	2.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03
Rolling 12 Month Sum (ton/year)						0.075												0.022						

Project: GMT2, Alternative C

Date: 7/25/2017

Project Emissions Summary - **Ethylbenzene**

	Year 1			Year 2											
	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Construction															
Construction Camp Generators	---	---	0	0	0	0	0	0	0	0	0	0	---	0	0
Aircraft Activity	---	3.E-06	3.E-06	1.E-06	3.E-06	3.E-06	3.E-06	4.E-06	6.E-06	3.E-05	3.E-05	3.E-05	---	3.E-06	3.E-06
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	---	2.E-03	2.E-03	3.E-03	---	---	---	---	---	---	---	---	---	2.E-03	2.E-03
Gravel Roads and Pad Construction	---	---	---	---	7.E-03	7.E-03	7.E-03	---	---	---	8.E-04	6.E-04	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	7.E-04	8.E-04	7.E-04	7.E-04	2.E-04	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	7.E-04	7.E-04	7.E-04	7.E-04	7.E-04	7.E-04	7.E-04	7.E-04	7.E-04	7.E-04	7.E-04	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	2.E-04	2.E-04
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]															
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]															
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Road Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Ice Road Travel Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations															
Line Heater	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Occupied Structure Pad - Incinerator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Occupied Structure Pad - Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Interventions															
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	0.E+00	3.E-03	3.E-03	4.E-03	8.E-03	8.E-03	9.E-03	1.E-03	1.E-03	1.E-03	2.E-03	1.E-03	0.E+00	2.E-03	3.E-03
Rolling 12 Month Sum (ton/year)												0.041	0.041	0.041	0.040

	Year 3											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	0	0	0	0	0	0	0	0	0	0	0	---
Aircraft Activity	1.E-06	3.E-06	3.E-06	1.E-04	6.E-04	6.E-04	6.E-04	6.E-04	7.E-04	6.E-04	5.E-04	5.E-04
Pipeline Installation	---	1.E-03	1.E-03	1.E-03	7.E-04	---	---	---	---	---	---	---
Power Line Installation	---	8.E-05	2.E-04	2.E-04	8.E-05	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	1.E-04	1.E-04	3.E-05	---	---	---	---	---	---	---
Seasonal Ice Road Construction	3.E-03	2.E-03	---	---	---	---	---	---	---	---	2.E-03	2.E-03
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	1.E-03	2.E-03	1.E-03	1.E-03	2.E-03	1.E-03	1.E-03	2.E-03	1.E-03
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	7.E-04	5.E-04	3.E-04	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06
Drilling Non-Mobile Support Equipment	---	---	---	---	8.E-07	8.E-07	8.E-07	8.E-07	8.E-07	8.E-07	8.E-07	8.E-07
Kuukpik Supporting Pad Generators	---	---	---	---	0	0	0	0	0	0	0	0
Drilling Mobile Equipment Tailpipe	---	---	---	---	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05	3.E-05
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06
Infill Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Road Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Ice Road Travel Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	---	---	---	---	---	---	---	---	---	---	---	0
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	0
Occupied Structure Pad - Incinerator	---	---	---	0	0	0	0	0	0	0	0	0
Occupied Structure Pad - Emergency Generator	---	---	---	0	0	0	0	0	0	0	0	0
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	9.E-04
Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	1.E-05
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	5.E-07
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	2.E-07
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	8.E-05
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	4.E-03	5.E-03	2.E-03	4.E-03	4.E-03	2.E-03	2.E-03	3.E-03	2.E-03	2.E-03	4.E-03	6.E-03
Rolling 12 Month Sum (ton/year)	0.041	0.037	0.032	0.026	0.029	0.030	0.031	0.032	0.033	0.035	0.037	0.040

	Year 4 - Year 10 (Routine Ops with Infill Drilling)											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	5.E-04	5E-04	---	---	---	---	---	---	---	---	5.E-04	5.E-04
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]												
Drill Rigs	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06
Drilling Non-Mobile Support Equipment	8.E-07	8.E-07	8.E-07	8.E-07	8.E-07	8.E-07	8.E-07	8.E-07	8.E-07	8.E-07	8.E-07	8.E-07
Kuukpik Supporting Pad Generators	0	0	0	0	0	0	0	0	0	0	0	0
Gravel Road Drilling Mobile Equipment Tailpipe	8.E-05	8.E-05	8.E-05	8.E-05	8.E-05	8.E-05	8.E-05	8.E-05	8.E-05	8.E-05	8.E-05	8.E-05
Ice Road Travel Tailpipe	5.E-05	5.E-05	5.E-05	5.E-05	5.E-05	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	0	0	0	0	0	0	0	0	0	0	0	0
Pigging Venting	---	---	---	---	---	3.E-06	---	---	---	---	---	---
Emergency Generator	0	0	0	0	0	0	0	0	0	0	0	0
Occupied Structure Pad - Incinerator	0	0	0	0	0	0	0	0	0	0	0	0
Occupied Structure Pad - Emergency Generator	0	0	0	0	0	0	0	0	0	0	0	0
Fugitive Components	9.E-04	9.E-04	9.E-04	9.E-04	9.E-04	9.E-04	9.E-04	9.E-04	9.E-04	9.E-04	9.E-04	9.E-04
Mobile Equipment Tailpipe	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	6.E-04	9.E-05	9.E-05	2.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04	6.E-04
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	5.E-07
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	2.E-07
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	8.E-05
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	2.E-03	2.E-03	1.E-03	1.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03
Rolling 12 Month Sum (ton/year)	0.020											

	Year 11 - Life of Wells (Routine Operations)											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	5.E-04	5E-04	---	---	---	---	---	---	---	---	---	---
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Road Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Ice Road Travel Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	0	0	0	0	0	0	0	0	0	0	0	0
Pigging Venting	---	---	---	---	---	3.E-06	---	---	---	---	---	---
Emergency Generator	0	0	0	0	0	0	0	0	0	0	0	0
Occupied Structure Pad - Incinerator	0	0	0	0	0	0	0	0	0	0	0	0
Occupied Structure Pad - Emergency Generator	0	0	0	0	0	0	0	0	0	0	0	0
Fugitive Components	9.E-04	9.E-04	9.E-04	9.E-04	9.E-04	9.E-04	9.E-04	9.E-04	9.E-04	9.E-04	9.E-04	9.E-04
Mobile Equipment Tailpipe	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	8.E-05	8.E-05	8.E-05	8.E-05	8.E-05	9.E-05	8.E-05	8.E-05	9.E-05	8.E-05	8.E-05	9.E-05
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03
Rolling 12 Month Sum (ton/year)	0.013											

Project: GMT2, Alternative C

Date: 7/25/2017

Project Emissions Summary - **Xylenes**

	Year 1			Year 2											
	10	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Construction															
Construction Camp Generators	---	---	4.E-04	1.E-03	1.E-03	1.E-03	1.E-03	8.E-04	4.E-04	4.E-04	5.E-04	4.E-04	---	3.E-04	4.E-04
Aircraft Activity	---	7.E-06	7.E-06	3.E-06	7.E-06	7.E-06	7.E-06	9.E-06	1.E-05	8.E-05	8.E-05	8.E-05	---	7.E-06	7.E-06
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	---	8.E-03	1.E-02	1.E-02	---	---	---	---	---	---	---	---	---	8.E-03	1.E-02
Gravel Roads and Pad Construction	---	---	---	---	3.E-02	3.E-02	3.E-02	---	---	---	4.E-03	3.E-03	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	2.E-03	3.E-03	2.E-03	2.E-03	5.E-04	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	7.E-04	7.E-04
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]															
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]															
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Road Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Ice Road Travel Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations															
Line Heater	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Occupied Structure Pad - Incinerator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Occupied Structure Pad - Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Interventions															
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	0.E+00	1.E-02	1.E-02	2.E-02	4.E-02	4.E-02	4.E-02	5.E-03	5.E-03	5.E-03	7.E-03	6.E-03	0.E+00	9.E-03	1.E-02
Rolling 12 Month Sum (ton/year)												0.18	0.18	0.17	0.17

	Year 3											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Construction												
Construction Camp Generators	1.E-03	8.E-04	8.E-04	8.E-04	8.E-04	4.E-04	4.E-04	5.E-04	4.E-04	4.E-04	1.E-04	---
Aircraft Activity	3.E-06	7.E-06	7.E-06	4.E-04	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	1.E-03	1.E-03
Pipeline Installation	---	6.E-03	6.E-03	6.E-03	3.E-03	---	---	---	---	---	---	---
Power Line Installation	---	3.E-04	6.E-04	6.E-04	3.E-04	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	3.E-04	3.E-04	8.E-05	---	---	---	---	---	---	---
Seasonal Ice Road Construction	1.E-02	1.E-02	---	---	---	---	---	---	---	---	8.E-03	1.E-02
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	5.E-03	6.E-03	5.E-03	5.E-03	6.E-03	5.E-03	5.E-03	6.E-03	5.E-03
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	3.E-03	2.E-03	1.E-03	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	7.E-04	7.E-04	7.E-04	7.E-04	7.E-04	7.E-04	7.E-04	7.E-04	7.E-04	7.E-04	7.E-04	7.E-04
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04
Drilling Non-Mobile Support Equipment	---	---	---	---	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04
Kuukpik Supporting Pad Generators	---	---	---	---	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04
Drilling Mobile Equipment Tailpipe	---	---	---	---	8.E-05	8.E-05	8.E-05	8.E-05	8.E-05	8.E-05	8.E-05	8.E-05
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05	1.E-05
Infill Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Road Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Ice Road Travel Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	---	---	---	---	---	---	---	---	---	---	---	0
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	4E-05
Occupied Structure Pad - Incinerator	---	---	---	0	0	0	0	0	0	0	0	0
Occupied Structure Pad - Emergency Generator	---	---	---	4E-05	4E-05	4E-05	4E-05	4E-05	4E-05	4E-05	4E-05	4E-05
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	1.E-03
Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	4.E-05
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	2.E-03
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	1.E-04
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	3.E-04
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	2.E-02	2.E-02	1.E-02	1.E-02	1.E-02	8.E-03	8.E-03	1.E-02	8.E-03	8.E-03	2.E-02	2.E-02
Rolling 12 Month Sum (ton/year)	0.17	0.16	0.13	0.11	0.12	0.12	0.13	0.13	0.13	0.14	0.15	0.16

	Year 4 - Year 10 (Routine Ops with Infill Drilling)											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Construction												
Construction Camp Generators	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	2.E-03	2E-03	---	---	---	---	---	---	---	---	2.E-03	2.E-03
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]												
Drill Rigs	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04
Drilling Non-Mobile Support Equipment	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04
Kuukpik Supporting Pad Generators	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04
Gravel Road Drilling Mobile Equipment Tailpipe	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04	3.E-04
Ice Road Travel Tailpipe	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	0	0	0	0	0	0	0	0	0	0	0	0
Pigging Venting	---	---	---	---	---	4.E-06	---	---	---	---	---	---
Emergency Generator	4E-05	4E-05	4E-05	4E-05	4E-05	4E-05	4E-05	4E-05	4E-05	4E-05	4E-05	4E-05
Occupied Structure Pad - Incinerator	0	0	0	0	0	0	0	0	0	0	0	0
Occupied Structure Pad - Emergency Generator	4E-05	4E-05	4E-05	4E-05	4E-05	4E-05	4E-05	4E-05	4E-05	4E-05	4E-05	4E-05
Fugitive Components	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03
Mobile Equipment Tailpipe	4.E-05	4.E-05	4.E-05	4.E-05	4.E-05	4.E-05	4.E-05	4.E-05	4.E-05	4.E-05	4.E-05	4.E-05
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	2.E-03	2.E-04	2.E-04	6.E-04	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	2.E-03
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	1.E-04
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	3.E-04
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	7.E-03	5.E-03	3.E-03	4.E-03	5.E-03	4.E-03	4.E-03	4.E-03	4.E-03	4.E-03	7.E-03	9.E-03
Rolling 12 Month Sum (ton/year)	0.061											

	Year 11 - Life of Wells (Routine Operations)											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Construction												
Construction Camp Generators	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	2.E-03	2E-03	---	---	--	---	---	---	---	---	---	---
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Road Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Ice Road Travel Tailpipe	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	0	0	0	0	0	0	0	0	0	0	0	0
Pigging Venting	---	---	---	---	---	4.E-06	---	---	---	---	---	---
Emergency Generator	4E-05	4E-05	4E-05	4E-05	4E-05	4E-05	4E-05	4E-05	4E-05	4E-05	4E-05	4E-05
Occupied Structure Pad - Incinerator	0	0	0	0	0	0	0	0	0	0	0	0
Occupied Structure Pad - Emergency Generator	4E-05	4E-05	4E-05	4E-05	4E-05	4E-05	4E-05	4E-05	4E-05	4E-05	4E-05	4E-05
Fugitive Components	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03
Mobile Equipment Tailpipe	4.E-05	4.E-05	4.E-05	4.E-05	4.E-05	4.E-05	4.E-05	4.E-05	4.E-05	4.E-05	4.E-05	4.E-05
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	4.E-03	4.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03
Rolling 12 Month Sum (ton/year)	0.026											

RAMBOLL ENVIRON

Project: GMT2, Alternative C

Date: 7/25/2017

Project Emissions Summary - **n-Hexane**

	Year 1			Year 2											
	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Construction															
Construction Camp Generators	---	---	0	0	0	0	0	0	0	0	0	0	---	0	0
Aircraft Activity	---	0	0	0	0	0	0	0	0	0	0	0	---	0	0
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	---	1.E-03	1.E-03	2.E-03	---	---	---	---	---	---	---	---	---	1.E-03	1.E-03
Gravel Roads and Pad Construction	---	---	---	---	4.E-03	4.E-03	4.E-03	---	---	---	5.E-04	4.E-04	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	2.E-04	3.E-04	2.E-04	2.E-04	6.E-05	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	5.E-04	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	2.E-04	2.E-04
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]															
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]															
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Road Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Ice Road Travel Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations															
Line Heater	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Occupied Structure Pad - Incinerator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Occupied Structure Pad - Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Interventions															
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	0.E+00	2.E-03	2.E-03	2.E-03	4.E-03	4.E-03	4.E-03	8.E-04	7.E-04	7.E-04	1.E-03	9.E-04	0.E+00	1.E-03	2.E-03
Rolling 12 Month Sum (ton/year)												0.023	0.023	0.022	0.022

	Year 3											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	0	0	0	0	0	0	0	0	0	0	0	---
Aircraft Activity	0	0	0	0	0	0	0	0	0	0	0	0
Pipeline Installation	---	7.E-04	7.E-04	7.E-04	3.E-04	---	---	---	---	---	---	---
Power Line Installation	---	3.E-05	7.E-05	7.E-05	3.E-05	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	3.E-05	3.E-05	8.E-06	---	---	---	---	---	---	---
Seasonal Ice Road Construction	2.E-03	1.E-03	---	---	---	---	---	---	---	---	1.E-03	1.E-03
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	5.E-04	6.E-04	5.E-04	5.E-04	6.E-04	5.E-04	5.E-04	6.E-04	5.E-04
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	3.E-04	2.E-04	1.E-04	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	0	0	0	0	0	0	0	0
Drilling Non-Mobile Support Equipment	---	---	---	---	0	0	0	0	0	0	0	0
Kuukpik Supporting Pad Generators	---	---	---	---	0	0	0	0	0	0	0	0
Drilling Mobile Equipment Tailpipe	---	---	---	---	2.E-05	2.E-05	2.E-05	2.E-05	2.E-05	2.E-05	2.E-05	2.E-05
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03
Infill Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Road Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Ice Road Travel Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	---	---	---	---	---	---	---	---	---	---	---	2.E-03
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	0
Occupied Structure Pad - Incinerator	---	---	---	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03
Occupied Structure Pad - Emergency Generator	---	---	---	0	0	0	0	0	0	0	0	0
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	1.E-02
Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	9.E-06
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	0.E+00
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	0.E+00
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	6.E-05
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	2.E-03	3.E-03	1.E-03	3.E-03	4.E-03	4.E-03	4.E-03	4.E-03	4.E-03	4.E-03	5.E-03	2.E-02
Rolling 12 Month Sum (ton/year)	0.022	0.020	0.017	0.016	0.020	0.022	0.025	0.028	0.031	0.034	0.038	0.054

	Year 4 - Year 10 (Routine Ops with Infill Drilling)											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	3.E-04	3E-04	---	---	---	---	---	---	---	---	3.E-04	3.E-04
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]												
Drill Rigs	0	0	0	0	0	0	0	0	0	0	0	0
Drilling Non-Mobile Support Equipment	0	0	0	0	0	0	0	0	0	0	0	0
Kuukpik Supporting Pad Generators	0	0	0	0	0	0	0	0	0	0	0	0
Gravel Road Drilling Mobile Equipment Tailpipe	6.E-05	6.E-05	6.E-05	6.E-05	6.E-05	6.E-05	6.E-05	6.E-05	6.E-05	6.E-05	6.E-05	6.E-05
Ice Road Travel Tailpipe	4.E-05	4.E-05	4.E-05	4.E-05	4.E-05	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03
Pigging Venting	---	---	---	---	---	4.E-04	---	---	---	---	---	---
Emergency Generator	0	0	0	0	0	0	0	0	0	0	0	0
Occupied Structure Pad - Incinerator	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03
Occupied Structure Pad - Emergency Generator	0	0	0	0	0	0	0	0	0	0	0	0
Fugitive Components	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02
Mobile Equipment Tailpipe	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	0.E+00	0.E+00	0.E+00	0.E+00	0.E+00	0.E+00	0.E+00	0.E+00	0.E+00	0.E+00	0.E+00	0.E+00
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	0.E+00
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	0.E+00
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	6.E-05
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	2.E-02	2.E-02	1.E-02	1.E-02	1.E-02	2.E-02	1.E-02	1.E-02	1.E-02	1.E-02	2.E-02	2.E-02
Rolling 12 Month Sum (ton/year)	0.18											

	Year 11 - Life of Wells (Routine Operations)											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	3.E-04	3E-04	---	---	---	---	---	---	---	---	---	---
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Road Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Ice Road Travel Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03
Pigging Venting	---	---	---	---	---	4.E-04	---	---	---	---	---	---
Emergency Generator	0	0	0	0	0	0	0	0	0	0	0	0
Occupied Structure Pad - Incinerator	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03
Occupied Structure Pad - Emergency Generator	0	0	0	0	0	0	0	0	0	0	0	0
Fugitive Components	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02
Mobile Equipment Tailpipe	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06	9.E-06
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	0.E+00	0.E+00	0.E+00	0.E+00	0.E+00	0.E+00	0.E+00	0.E+00	0.E+00	0.E+00	0.E+00	0.E+00
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	2.E-02	2.E-02	1.E-02	1.E-02	1.E-02	2.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02
Rolling 12 Month Sum (ton/year)	0.18											

Project: GMT2, Alternative C

Date: 7/25/2017

Project Emissions Summary - **Formaldehyde**

	Year 1			Year 2											
	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Construction															
Construction Camp Generators	---	---	2.E-03	6.E-03	5.E-03	5.E-03	5.E-03	3.E-03	2.E-03	2.E-03	2.E-03	2.E-03	---	1.E-03	2.E-03
Aircraft Activity	---	2.E-04	2.E-04	9.E-05	2.E-04	2.E-04	2.E-04	2.E-04	4.E-04	2.E-03	2.E-03	2.E-03	---	2.E-04	2.E-04
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	---	7.E-02	1.E-01	1.E-01	---	---	---	---	---	---	---	---	---	7.E-02	1.E-01
Gravel Roads and Pad Construction	---	---	---	---	3.E-01	3.E-01	3.E-01	---	---	---	3.E-02	3.E-02	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	3.E-02	3.E-02	3.E-02	3.E-02	6.E-03	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	2.E-02	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	7.E-03	7.E-03
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]															
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]															
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Road Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Ice Road Travel Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations															
Line Heater	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Occupied Structure Pad - Incinerator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Occupied Structure Pad - Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Interventions															
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	0.E+00	1.E-01	1.E-01	2.E-01	3.E-01	3.E-01	4.E-01	6.E-02	5.E-02	5.E-02	6.E-02	5.E-02	0.E+00	8.E-02	1.E-01
Rolling 12 Month Sum (ton/year)												1.69	1.69	1.68	1.67

	Year 3											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	4.E-03	3.E-03	3.E-03	3.E-03	3.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	4.E-04	---
Aircraft Activity	9.E-05	2.E-04	2.E-04	1.E-02	5.E-02	5.E-02	5.E-02	5.E-02	5.E-02	5.E-02	4.E-02	4.E-02
Pipeline Installation	---	6.E-02	6.E-02	6.E-02	3.E-02	---	---	---	---	---	---	---
Power Line Installation	---	3.E-03	7.E-03	7.E-03	3.E-03	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	4.E-03	4.E-03	1.E-03	---	---	---	---	---	---	---
Seasonal Ice Road Construction	1.E-01	1.E-01	---	---	---	---	---	---	---	---	7.E-02	1.E-01
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	5.E-02	7.E-02	5.E-02	5.E-02	7.E-02	5.E-02	5.E-02	7.E-02	5.E-02
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	3.E-02	2.E-02	1.E-02	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	7.E-03	7.E-03	7.E-03	7.E-03	7.E-03	7.E-03	7.E-03	7.E-03	7.E-03	7.E-03	7.E-03	7.E-03
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02
Drilling Non-Mobile Support Equipment	---	---	---	---	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03
Kuukpik Supporting Pad Generators	---	---	---	---	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03
Drilling Mobile Equipment Tailpipe	---	---	---	---	8.E-04	8.E-04	8.E-04	8.E-04	8.E-04	8.E-04	8.E-04	8.E-04
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Road Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Ice Road Travel Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	---	---	---	---	---	---	---	---	---	---	---	8.E-05
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	---	---	---	---	---	---	---	---	---	---	---	2E-05
Occupied Structure Pad - Incinerator	---	---	---	8.E-05	8.E-05	8.E-05	8.E-05	8.E-05	8.E-05	8.E-05	8.E-05	8.E-05
Occupied Structure Pad - Emergency Generator	---	---	---	2E-05	2E-05	2E-05	2E-05	2E-05	2E-05	2E-05	2E-05	2E-05
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	4.E-04
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	7.E-03
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	3.E-04
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	3.E-03
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	2.E-01	2.E-01	1.E-01	1.E-01	2.E-01	1.E-01	1.E-01	1.E-01	1.E-01	1.E-01	2.E-01	2.E-01
Rolling 12 Month Sum (ton/year)	1.68	1.53	1.28	1.06	1.18	1.26	1.33	1.40	1.47	1.60	1.72	1.83

	Year 4 - Year 10 (Routine Ops with Infill Drilling)											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	2.E-02	2E-02	---	---	---	---	---	---	---	---	2.E-02	2.E-02
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]												
Drill Rigs	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02	1.E-02
Drilling Non-Mobile Support Equipment	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03
Kuukpik Supporting Pad Generators	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03	1.E-03
Gravel Road Drilling Mobile Equipment Tailpipe	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03	3.E-03
Ice Road Travel Tailpipe	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	8.E-05	8.E-05	8.E-05	8.E-05	8.E-05	8.E-05	8.E-05	8.E-05	8.E-05	8.E-05	8.E-05	8.E-05
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	2E-05	2E-05	2E-05	2E-05	2E-05	2E-05	2E-05	2E-05	2E-05	2E-05	2E-05	2E-05
Occupied Structure Pad - Incinerator	8.E-05	8.E-05	8.E-05	8.E-05	8.E-05	8.E-05	8.E-05	8.E-05	8.E-05	8.E-05	8.E-05	8.E-05
Occupied Structure Pad - Emergency Generator	2E-05	2E-05	2E-05	2E-05	2E-05	2E-05	2E-05	2E-05	2E-05	2E-05	2E-05	2E-05
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Tailpipe	4.E-04	4.E-04	4.E-04	4.E-04	4.E-04	4.E-04	4.E-04	4.E-04	4.E-04	4.E-04	4.E-04	4.E-04
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	4.E-02	6.E-03	6.E-03	2.E-02	4.E-02	4.E-02	4.E-02	4.E-02	4.E-02	4.E-02	4.E-02	4.E-02
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	7.E-03
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	3.E-04
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	3.E-03
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	8.E-02	4.E-02	2.E-02	3.E-02	6.E-02	6.E-02	6.E-02	6.E-02	6.E-02	6.E-02	8.E-02	9.E-02
Rolling 12 Month Sum (ton/year)	0.71											

	Year 11 - Life of Wells (Routine Operations)											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction												
Construction Camp Generators	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	---	---	---	---	---	---	---	---	---	---	---	---
Pipeline Installation	---	---	---	---	---	---	---	---	---	---	---	---
Power Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Fiber Optic Line Installation	---	---	---	---	---	---	---	---	---	---	---	---
Seasonal Ice Road Construction	2.E-02	2E-02	---	---	---	---	---	---	---	---	---	---
Gravel Roads and Pad Construction	---	---	---	---	---	---	---	---	---	---	---	---
GMT2 Facilities Installation	---	---	---	---	---	---	---	---	---	---	---	---
Alpine ACF and CD5 Facilities Installation Related to GMT2	---	---	---	---	---	---	---	---	---	---	---	---
Vertical Support Member (VSM) Construction	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Construction Fugitive Emissions	---	---	---	---	---	---	---	---	---	---	---	---
Season 1 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Season 2 Construction Mobile Support Dust	---	---	---	---	---	---	---	---	---	---	---	---
Developmental Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Infill Drilling [1]												
Drill Rigs	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Kuukpik Supporting Pad Generators	---	---	---	---	---	---	---	---	---	---	---	---
Gravel Road Drilling Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Ice Road Travel Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Drilling Well Flowback and Flaring	---	---	---	---	---	---	---	---	---	---	---	---
Routine Operations												
Line Heater	8.E-05	8.E-05	8.E-05	8.E-05	8.E-05	8.E-05	8.E-05	8.E-05	8.E-05	8.E-05	8.E-05	8.E-05
Pigging Venting	---	---	---	---	---	---	---	---	---	---	---	---
Emergency Generator	2E-05	2E-05	2E-05	2E-05	2E-05	2E-05	2E-05	2E-05	2E-05	2E-05	2E-05	2E-05
Occupied Structure Pad - Incinerator	8.E-05	8.E-05	8.E-05	8.E-05	8.E-05	8.E-05	8.E-05	8.E-05	8.E-05	8.E-05	8.E-05	8.E-05
Occupied Structure Pad - Emergency Generator	2E-05	2E-05	2E-05	2E-05	2E-05	2E-05	2E-05	2E-05	2E-05	2E-05	2E-05	2E-05
Fugitive Components	---	---	---	---	---	---	---	---	---	---	---	---
Mobile Equipment Tailpipe	4.E-04	4.E-04	4.E-04	4.E-04	4.E-04	4.E-04	4.E-04	4.E-04	4.E-04	4.E-04	4.E-04	4.E-04
Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Wind Erosion Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Aircraft Activity	6.E-03	6.E-03	6.E-03	6.E-03	6.E-03	7.E-03	6.E-03	6.E-03	7.E-03	6.E-03	6.E-03	7.E-03
Well Interventions												
Well Intervention Main Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Non-Mobile Support Equipment	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Tailpipe	---	---	---	---	---	---	---	---	---	---	---	---
Well Intervention Mobile Equipment Fugitive Dust	---	---	---	---	---	---	---	---	---	---	---	---
Total (ton/month) all activities	3.E-02	3.E-02	6.E-03	6.E-03	6.E-03	7.E-03	6.E-03	6.E-03	7.E-03	6.E-03	6.E-03	7.E-03
Rolling 12 Month Sum (ton/year)	0.12											